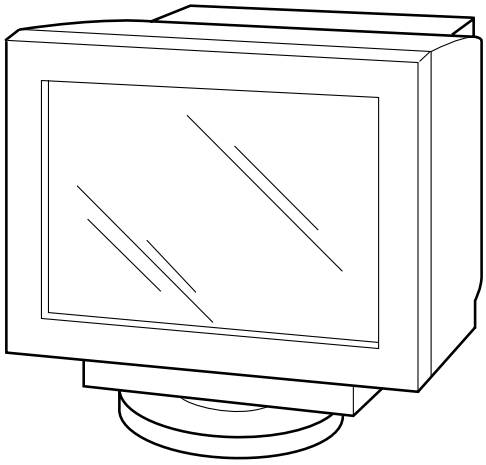
GDM-5411

SERVICE MANUAL

N. Hemisphere Model
S. Hemisphere Model

Chassis No. SCC-L22Q-A



G1 CHASSIS

SPECIFICATIONS

CRT	0.24 mm aperture grille pitch 21 inches measured diagonally 90-degree deflection FD Trinitron
Viewable image size	Approx. 403.8 × 302.2 mm (w/h) (16 × 12 inches) 19.8" viewing image
Recommended resolution	Horizontal: 1600 dots Vertical: 1280 lines
Standard image area	Approx. 388 × 291 mm (w/h) (15 3/8 × 11 1/2 inches) or Approx. 364 × 291 mm (w/h) (14 3/8 × 11 1/2 inches)
Deflection frequency*	Horizontal: 30 to 121 kHz Vertical: 48 to 160 Hz
AC input voltage/current	100 to 240 V, 50 – 60 Hz, 2.0 – 1.0 A
Power consumption	Approx. 145 W
Dimensions	Approx. 498 × 491 × 478 mm (w/h/d) (19 5/8 × 19 3/8 × 18 7/8 inches)
Mass	Approx. 32 kg (70 lb 9 oz)
Plug and Play	DDC1/2B/2Bi, GTF**

* Recommended horizontal and vertical timing condition
- Horizontal sync width duty should be more than 4.8% of total horizontal time or 0.8 µs, whichever is larger.
- Horizontal blanking width should be more than 2.3 µsec.
- Vertical blanking width should be more than 450 µsec.

** If the input signal is Generalized Timing Formula (GTF) compliant, the GTF feature of the monitor will automatically provide an optimal image for the screen.

Design and specifications are subject to change without notice.

COLOR GRAPHIC DISPLAY

SiliconGraphics

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC Leakage. Check leakage as described below.

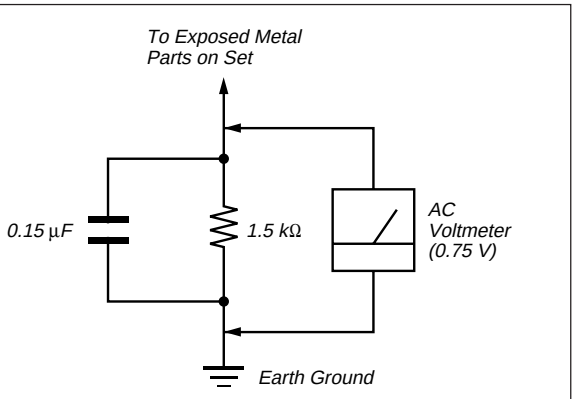
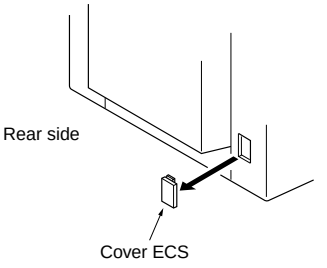


Fig. A. Using an AC voltmeter to check AC leakage.

CAUTION ON DAS (ECS) CONNECTOR

- The connector for DAS (ECS) adjustment is provided inside the cover shown below. Be careful with an electrical shock when connecting the connector with the power supplied. Also, return the removed cover to the home position.



LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes).

Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOMs that are suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

WARNING!!
NEVER TURN ON THE POWER IN A CONDITION IN WHICH THE DEGAUSS COIL HAS BEEN REMOVED.

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

AVERTISSEMENT!!
NE JAMAIS METTRE SOUS TENSION QUAND LA BOBINE DE DEMAGNETISATION EST ENLEVÉE.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!
LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SONT CRITIQUES POUR LA SÉCURITÉ. NE LES REMPLACER QUE PAR UNE PIÈCE PORTANT LE NUMÉRO SPECIFIÉ. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

POWER SAVING FUNCTION

This monitor meets the power-saving guidelines set by VESA, ENERGY STAR, and NUTEK. If the monitor is connected to a computer or video graphics board that is DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

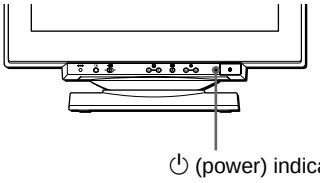
	Power consumption mode	Screen	Horizontal sync signal	Vertical sync signal	Power consumption	Recovery time	⏻ (power) indicator
1	Normal operation	active	present	present	≤ 145 W	—	Green
2	Standby (1st mode)	blank	absent	present	≤ 100 W	Approx. 3 sec.	Green and orange alternate
3	Suspend (2nd mode) (sleep)*	blank	present	absent	≤ 15 W	Approx. 3 sec.	Green and orange alternate
4	Active-off** (3rd mode) (deep sleep)*	blank	absent	absent	Approx. 1 W	Approx. 10 sec.	Orange
5	Power-off	—	—	—	0 W	—	Off

* "Sleep" and "deep sleep" are power saving modes defined by the Environmental Protection Agency.

** When your computer enters a power saving mode, the input signal is cut and NO INPUT SIGNAL appears on the screen. After a few seconds, the monitor enters power saving mode.

DIAGNOSIS

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer(s), the screen will go blank and the ⏻ (power) indicator will either light up green or flash orange. If the ⏻ (power) indicator is lit in orange, the computer is in power saving mode. Try pressing any key on the keyboard.

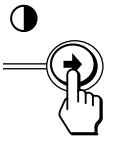


If the ⏻ (power) indicator is green

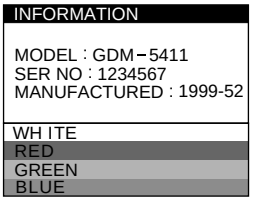
1 Remove any plugs from the video input 1 and 2 connectors, or turn off the connected computer(s).

2 Press the ⏻ (power) button twice to turn the monitor off and then on.

3 Press the ➡ button for 2 seconds before the monitor enters power saving mode.



If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cables and check the condition of your computer(s).



If the color bars do not appear, there is a potential monitor failure. Inform your service representative of the monitor's condition.

If the ⏻ (power) indicator is flashing orange

Press the ⏻ (power) button twice to turn the monitor off and then on.

If the ⏻ (power) indicator lights up green, the monitor is working properly.

If the ⏻ (power) indicator is still flashing, there is a potential monitor failure. Count the number of seconds between orange flashes of the ⏻ (power) indicator and inform your service representative of the monitor's condition. Be sure to note the model name and serial number of your monitor.

TIMING SPECIFICATION

MODE AT PRODUCTION	MODE1	MODE2	MODE3	MODE4	MODE5	MODE6	MODE7
RESOLUTION	800 X 600	1024 X 768	1024 X 768	1024 X 768	1280 X 492	1280 X 1024	1280 X 1024
CLOCK	81.000 MHz	63.546 MHz	103.503 MHz	135.000 MHz	107.250 MHz	89.571 MHz	107.250 MHz
— HORIZONTAL —							
H-FREQ	76.705 kHz	48.732 kHz	77.472 kHz	96.983 kHz	63.893 kHz	53.316 kHz	63.839 kHz
	usec	usec	usec	usec	usec	usec	usec
H. TOTAL	13.037	20.521	12.908	10.311	15.664	18.756	15.664
H. BLK	3.160	4.406	3.014	2.726	3.730	4.466	3.730
H. FP	0.296	1.133	0.251	0.119	0.373	0.357	0.373
H. SYNC	0.988	1.196	1.005	1.067	1.119	1.340	1.119
H. BP	1.877	2.077	1.758	1.541	2.238	2.769	2.238
H. ACTIV	9.877	16.114	9.893	7.585	11.935	14.290	11.935
— VERTICAL —							
V. FREQ(HZ)	119.851 Hz	59.940 Hz	96.000 Hz	119.880 Hz	119.999 Hz	50.062 Hz	59.943 Hz
	lines	lines	lines	lines	lines	lines	lines
V. TOTAL	640	813	807	809	532	1065	1065
V. BLK	40	45	39	41	40	41	41
V. FP	1	3	3	1	3	3	3
V. SYNC	3	3	3	3	3	3	3
V. BP	36	39	33	37	34	35	35
V. ACTIV	600	768	768	768	492	1024	1024
— SYNC —							
INT(G)	YES	YES	NO	NO	YES	YES	YES
EXT(H/V)/POLARITY	NO	NO	YES N/N	YES P/P	NO	NO	NO
EXT(CS) /POLARITY	NO	NO	NO	NO	NO	NO	NO
INT/NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT

MODE AT PRODUCTION	MODE8	MODE9	MODE10	MODE11	MODE12	MODE13
RESOLUTION	1280 X 1024	1280 X 1024	1280 X 1024	1600 X 1024	1600 X 1200	1920 X 1035
CLOCK	129.250 MHz	135.000 MHz	140.250 MHz	158.400 MHz	229.500 MHz	159.923 MHz
— HORIZONTAL —						
H-FREQ	76.935 kHz	79.976 kHz	81.922 kHz	77.647 kHz	106.250 kHz	65.009 kHz
	usec	usec	usec	usec	usec	usec
H. TOTAL	12.998	12.504 Hz	12.207	12.879	9.412	15.382
H. BLK	3.095	3.022	3.080	2.778	2.440	3.377
H. FP	0.248	0.119	0.228	0.303	0.279	0.275
H. SYNC	1.083	1.067	1.255	0.909	0.837	0.825
H. BP	1.764	1.837	1.597	1.566	1.325	2.276
H. ACTIV	9.903	9.481	9.127	10.101	6.972	12.006
— VERTICAL —						
V. FREQ(HZ)	72.239 Hz	75.025 Hz	75.924 Hz	72.029 Hz	85.000 Hz	60.194 Hz
	lines	lines	lines	lines	lines	lines
V. TOTAL	1065	1066	1079	1078	1250	1080
V. BLK	41	42	55	54	50	45
V. FP	3	1	3	3	1	3
V. SYNC	3	3	3	3	3	10
V. BP	35	38	49	48	46	32
V. ACTIV	1024	1024	1024	1024	1200	1035
— SYNC —						
INT(G)	YES	NO	YES	YES	NO	YES
EXT(H/V)/POLARITY	NO	YES P/P	NO	NO	YES P/P	NO
EXT(CS) /POLARITY	NO	NO	NO	NO	NO	NO
INT/NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT

99.11.04 VER.

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Note: Hand degauss must be used on stand-by or power-off condition.
This model has an automatic earth magnetism correction function by using an earth magnetism sensor and a LCC coil. When using a hand degauss while monitor (LCC coil) is being operated, it sometimes gets magnetized, and the system may not work properly as a result.

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

SECTION 1
GENERAL

Precautions

Warning on power connections

Use an appropriate power cord for your local power supply.

Example of plug types

for 100 to 120 V AC | for 200 to 240 V AC | for 240 V AC only

- Before disconnecting the power cord, wait at least 30 seconds after turning off the power to allow the static electricity on the screen's surface to discharge.
- After the power is turned on, the screen is demagnetized (degaussed) for about 2 seconds. This generates a strong magnetic field around the screen which may affect data stored on magnetic tapes and disks placed near the monitor. Be sure to keep magnetic recording equipment, tapes, and disks away from the monitor.

The equipment should be installed near an easily accessible outlet.

Installation

Do not install the monitor in the following places:

- on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies, etc.) that may block the ventilation holes
- near heat sources such as radiators or air ducts, or in a place subject to direct sunlight
- in a place subject to severe temperature changes
- in a place subject to mechanical vibration or shock
- on an unstable surface
- near equipment which generates magnetism, such as a transformer or high voltage power lines
- near or on an electrically charged metal surface

Maintenance

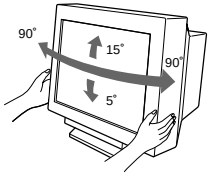
- Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzene.

Transportation

When you transport this monitor for repair or shipment, use the original carton and packing materials.

Use of the tilt-swivel

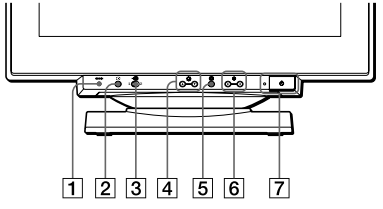
This monitor can be adjusted within the angles shown below. To turn the monitor vertically or horizontally, hold it at the bottom with both hands.



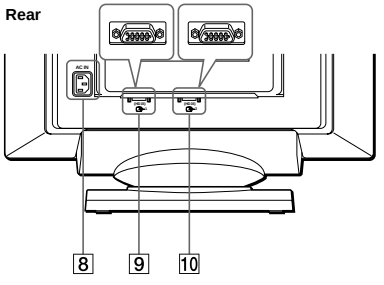
Identifying parts and controls

See the pages in parentheses for further details.

Front



Rear



1 (reset) button (page 14)
This button resets the adjustments to the factory settings.

2 (auto sizing and centering) button (page 7)
This button automatically adjusts the size and centering of the picture.

3 (input) switch (page 7)
This switch selects the INPUT 1 (video input 1 connector: 1) or INPUT 2 (video input 2 connector: 2) video input signal.

4 (brightness) ↓/↑ buttons (page 9)
These buttons display the BRIGHTNESS/CONTRAST menu and function as the ↓/↑ buttons when selecting menu items.

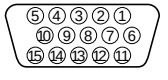
5 (menu) button (page 9)
This button displays the main menu.

6 (contrast) ←/→ buttons (page 9)
These buttons display the BRIGHTNESS/CONTRAST menu and function as the ←/→ buttons when making adjustments.

7 (power) switch and indicator (pages 6, 15, 19)
This button turns the monitor on and off. The power indicator lights up in green when the monitor is turned on, and either flashes in green and orange, or lights up in orange when the monitor is in power saving mode.

8 AC IN connector (page 6)
This connector provides AC power to the monitor.

9 Video input 1 connector (HD15) (1) (page 6)
This connector inputs RGB video signals (0.700 Vp-p, positive) and sync signals.



Pin No.	Signal
1	Red
2	Green (Sync on Green)
3	Blue
4	ID (Ground)
5	DDC Ground*
6	Red Ground
7	Green Ground
8	Blue Ground
9	DDC + 5V*
10	Ground
11	ID (Ground)
12	Bi-Directional Data (SDA)*
13	H. Sync
14	V. Sync
15	Data Clock (SCL)*

* DDC (Display Data Channel) is a standard of VESA.

10 Video input 2 connector (HD15) (2) (page 6)
This connector inputs RGB video signals (0.700 Vp-p, positive) and sync signals. Pin assignment is the same as 9 described above.

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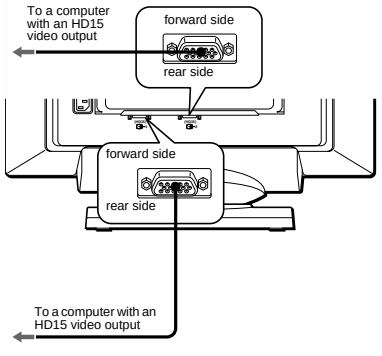
1-1

Setup

This monitor works with platforms running at horizontal frequencies between 30 and 121 kHz.

Step 1: Connect your monitor to your computer

With the monitor and computer switched off, connect the video signal cable to the video input connector of the monitor and to the video output of the computer.

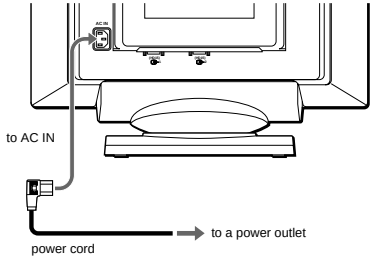


Notes

- Do not touch the pins of the video signal cable connector as this might bend the pins.
- When connecting the video signal cable, check the alignment of the HD15 connector. Do not force the connector in the wrong way or the pins might bend.

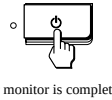
Step 2: Connect the power cord

With the monitor and computer switched off, first connect the proper power cord for your local power supply to the monitor, then connect it to a power outlet.



Step 3: Turn on the monitor and computer

First turn on the monitor, then turn on the computer.



The installation of your monitor is complete.
If necessary, use the monitor's controls to adjust the picture.

If no picture appears on your screen

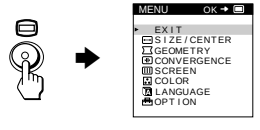
- Check that the monitor is correctly connected to the computer.
- If NO INPUT SIGNAL appears on the screen, follow the on-screen messages (page 16).
- If you are replacing an old monitor with this model and OUT OF SCAN RANGE appears on the screen, reconnect the old monitor. Then adjust the computer's graphic board so that the horizontal frequency is between 30 – 121 kHz, and the vertical frequency is between 48 – 160 Hz.

For more information about the on-screen messages, see "Trouble symptoms and remedies" on page 17.

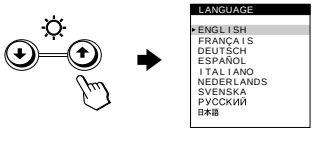
Selecting the on-screen menu language (LANGUAGE)

English, French, German, Spanish, Italian, Dutch, Swedish, Russian and Japanese versions of the on-screen menus are available. The default setting is English.

1 Press the ▭ button.
See page 9 for more information on using the ▭ button.



2 Press the ↓/↑ buttons to highlight LANGUAGE and press the ▭ button again.
See page 9 for more information on using the ↓/↑ buttons.



3 Press the ↓/↑ buttons to select a language.

- ENGLISH
- FRANÇAIS: French
- DEUTSCH: German
- ESPAÑOL: Spanish
- ITALIANO: Italian
- NEDERLANDS: Dutch
- SVENSKA: Swedish
- РУССКИЙ: Russian
- 日本語: Japanese

To close the menu
Press the ▭ button once to return to the main MENU, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.

To reset to English
Press the ↩ (reset) button while the LANGUAGE menu is displayed on the screen.

Selecting the input signal

You can connect two computers to this monitor using the video input 1 (⇨1) and video input 2 (⇨2) connectors. To select one of the two computers, use the ⇨ switch.

Move the ⇨ switch.
The selected connector appears on the screen for 3 seconds.

"INPUT 1" (video input 1 connector: ⇨1) or "INPUT 2" (video input 2 connector: ⇨2) appears on the screen.

Note
If no signal is input to the selected connector, NO INPUT SIGNAL appears on the screen. After a few seconds, the monitor enters the power saving mode. If this happens, switch to the other connector.

Automatically sizing and centering the picture

You can easily adjust the picture to fill the screen by pressing the ⊡ (auto sizing and centering) button.

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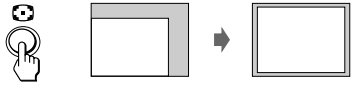
Press the ⊡ button.
The picture automatically fills the screen.



Notes

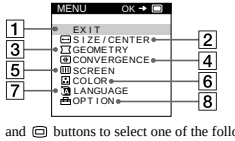
- This function is intended for use with a computer that provides a full-screen picture. It may not work properly if the background color is dark or if the input picture does not fill the screen to the edges.
- Pictures with an aspect ratio of 5:4 (resolution: 1280 × 1024, 1600 × 1280) are displayed at their actual resolution and do not fill the screen to the edges.
- The displayed image moves for a few seconds when the ⊡ button is pressed. This is not a malfunction.

Customizing Your Monitor

You can make numerous adjustments to your monitor using the on-screen menu.

Navigating the menu

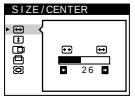
Press the ▭ button to display the main MENU on your screen.



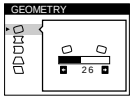
Use the ↓/↑ and ▭ buttons to select one of the following menus. See page 9 for more information on using the ↓/↑ and ▭ buttons.

1 EXIT
Select EXIT to close the menu.

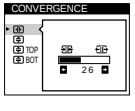
2 SIZE/CENTER (page 10)
Selects the SIZE/CENTER menu to adjust the picture's size, centering or zoom.



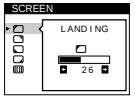
3 GEOMETRY (page 10)
Select the GEOMETRY menu to adjust the picture's rotation and shape.



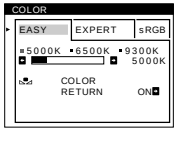
4 CONVERGENCE (page 11)
Select the CONVERGENCE menu to adjust the picture's horizontal and vertical convergence.



5 SCREEN (page 11)
Select the SCREEN menu to adjust the picture's quality. You can adjust the landing and moire cancellation effect.

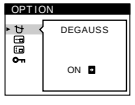


6 COLOR (page 12)
Select the COLOR menu to adjust the picture's color temperature. You can use this to match the monitor's colors to a printed picture's colors.



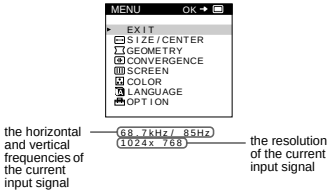
7 LANGUAGE (page 7)
Select LANGUAGE to choose the on-screen menu's language.

8 OPTION (page 13)
Select OPTION to adjust the monitor's options. The options include:
- degaussing the screen
- changing the on-screen menu position
- locking the controls



■ Displaying the current input signal

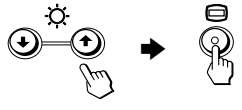
The horizontal and vertical frequencies of the current input signal are displayed in the main MENU. If the signal matches one of this monitor's factory preset modes, the resolution is also displayed.



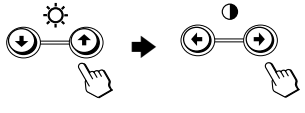
■ Using the ▭, ↓/↑, and ←/→ buttons

1 Display the main MENU.
Press the ▭ button to display the main MENU on your screen.

2 Select the menu you want to adjust.
Press the ↓/↑ buttons to highlight the desired menu. Press the ▭ button to select the menu item.



3 Adjust the menu.
Press the ↓/↑ buttons to select the desired adjustment item. Press the ←/→ buttons to make the adjustment.



4 Close the menu.
Press the ▭ button once to return to the main MENU, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.

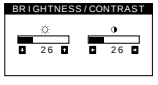
■ Resetting the adjustments

Press the ⇢ (reset) button. See page 14 for more information on resetting the adjustments.

Adjusting the brightness and contrast

Brightness and contrast adjustments are made using a separate BRIGHTNESS/CONTRAST menu.
These settings are stored in memory for the signals from the currently selected input connector.

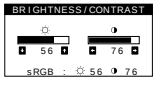
1 Press either one of the ☼ (brightness) ↓/↑ or ◑ (contrast) ←/→ buttons.
The BRIGHTNESS/CONTRAST menu appears on the screen.



2 Press the ☼ (brightness) ↓/↑ buttons to adjust the brightness (☼), and ◑ (contrast) ←/→ buttons to adjust the contrast (◑).

If you are using the sRGB mode

If you selected the sRGB mode in the COLOR menu, the following BRIGHTNESS/CONTRAST menu appears on the screen.



For more information about using the sRGB mode, see "sRGB mode" in "Adjusting the color of the picture (COLOR)" on page 13.

The menu automatically disappears after about 3 seconds.

GB

Adjusting the size of the picture (SIZE/CENTER)

This setting is stored in memory for the current input signal.

1 Press the button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight SIZE/CENTER and press the button again.
The SIZE/CENTER menu appears on the screen.

3 First press the ↓/↑ buttons to select for horizontal adjustment, or for vertical adjustment. Then press the ←/→ buttons to adjust the size.

Adjusting the centering of the picture (SIZE/CENTER)

This setting is stored in memory for the current input signal.

1 Press the button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight SIZE/CENTER and press the button again.
The SIZE/CENTER menu appears on the screen.

3 First press the ↓/↑ buttons to select for horizontal adjustment, or for vertical adjustment. Then press the ←/→ buttons to adjust the centering.

Enlarging or reducing the picture (ZOOM)

This setting is stored in memory for the current input signal.

1 Press the button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight SIZE/CENTER and press the button again.
The SIZE/CENTER menu appears on the screen.

3 Press the ↓/↑ buttons to select (zoom), and press the ←/→ buttons to enlarge or reduce the picture.

Note
Adjustment stops when either the horizontal or vertical size reaches its maximum or minimum value.

Adjusting the shape of the picture (GEOMETRY)

The GEOMETRY settings allow you to adjust the rotation and shape of the picture.
The (rotation) setting is stored in memory for all input signals. All other settings are stored in memory for the current input signal.

1 Press the button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight GEOMETRY and press the button again.
The GEOMETRY menu appears on the screen.

3 First press the ↓/↑ buttons to select the desired adjustment item. Then press the ←/→ buttons to make the adjustment.

Select	To
	rotate the picture
	expand or contract the picture sides
	shift the picture sides to the left or right
	adjust the picture width at the top of the screen
	shift the picture to the left or right at the top of the screen

Adjusting the convergence (CONVERGENCE)

The CONVERGENCE settings allow you to adjust the quality of the picture by controlling the convergence. The convergence refers to the alignment of the red, green, and blue color signals. If you see red or blue shadows around letters or lines, adjust the convergence.
These settings are stored in memory for all input signals.

1 Press the button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight CONVERGENCE and press the button again.
The CONVERGENCE menu appears on the screen.

3 First press the ↓/↑ buttons to select the desired adjustment item. Then press the ←/→ buttons to make the adjustment.

Select	To
	horizontally shift red or blue shadows. These adjustments effect the entire screen.
	vertically shift red or blue shadows. These adjustments effect the entire screen.
TOP V CONVER TOP	vertically shift red or blue shadows at the top of the screen
BOT V CONVER BOTTOM	vertically shift red or blue shadows at the bottom of the screen

Adjusting the quality of the picture (SCREEN)

The SCREEN settings allow you to adjust the quality of the picture by controlling the moire and landing.
- If the color is irregular at the corners of the screen, adjust the landing.
- If elliptical or wavy patterns appear on the screen, cancel the moire.

The CANCEL MOIRE and MOIRE ADJUST settings are stored in memory for the current input signal. All other settings are stored in memory for all input signals.

1 Press the button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight SCREEN and press the button again.
The SCREEN menu appears on the screen.

3 First press the ↓/↑ buttons to select the desired adjustment item. Then press the ←/→ buttons to make the adjustment.

Select	To
LANDING	reduce any color irregularities in the screen's top left corner to a minimum.
LANDING	reduce any color irregularities in the screen's top right corner to a minimum.
LANDING	reduce any color irregularities in the screen's bottom left corner to a minimum.
LANDING	reduce any color irregularities in the screen's bottom right corner to a minimum.
CANCEL MOIRE*	turn the moire cancellation function ON or OFF. (MOIRE ADJUST) appears in the menu when you select ON.
MOIRE ADJUST	adjust the degree of moire cancellation until the moire is at a minimum.

- Moire is a type of natural interference which produces soft, wavy lines on your screen. It may appear due to interference between the pattern of the picture on the screen and the phosphor pitch pattern of the monitor.

Example of moire

Note
The picture may become fuzzy when CANCEL MOIRE is set to ON.

GB

Adjusting the color of the picture (COLOR)

The COLOR settings allow you to adjust the picture's color temperature by changing the color level of the white color field. Colors appear reddish if the temperature is low, and bluish if the temperature is high. This adjustment is useful for matching the monitor's color to a printed picture's colors.

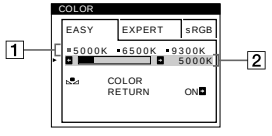
1 Press the ▭ button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight ⚙ COLOR and press the ▭ button again.
The COLOR menu appears on the screen.

3 Press the ←/→ buttons to select the adjustment mode.
There are three types of adjustment modes, EASY, EXPERT and sRGB.

4 First press the ↓/↑ buttons to select the desired adjustment item. Then press the ←/→ buttons to make the adjustment.
Adjust the selected mode according to the following instructions.

EASY mode

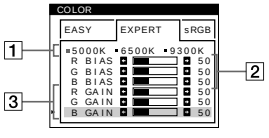


1 First press the ↓/↑ buttons to select the color temperature row 1, then press the ←/→ buttons to select a color temperature.
The preset color temperatures are 5000K, 6500K, and 9300K. Since the default setting is 9300K, the whites will change from a bluish hue to a reddish hue as the temperature is lowered to 6500K and 5000K.

2 If necessary, fine tune the color temperature. First press the ↓/↑ buttons to select the color temperature adjustment row 2, then press the ←/→ buttons to fine tune the color temperature.
If you fine tune the color temperature, the new color settings are stored in memory for each of the three color temperatures and item 1 of the on-screen menu changes as follows.
- [5000K]→[1]
- [6500K]→[2]
- [9300K]→[3]

EXPERT mode

You can make additional adjustments to the color in greater detail by selecting the EXPERT mode.



1 Press the ↓/↑ buttons to select the color temperature row 1, then press the ←/→ buttons to select a color temperature.

2 Press the ↓/↑ buttons to select the adjustment item 2, then press the ←/→ buttons to adjust the BIAS (black level).
This adjusts the dark areas of an image.

3 Press the ↓/↑ buttons to select the adjustment item 3, then press the ←/→ buttons to adjust the GAIN (white level).
This adjusts the light areas of an image.

You can adjust the R (red), G (green), B (blue) component of the input signal when making changes to items 2 and 3.

If you fine tune the color temperature, the new color settings are stored in memory for each of the three color temperatures and item 1 of the on-screen menu change as follows.
- [5000K]→[1]
- [6500K]→[2]
- [9300K]→[3]

Setting the color temperature for each of the video input connectors

You can set the fine tuning of the color temperature in EASY or EXPERT mode for each of the video input connectors (INPUT 1 and INPUT 2).

1 Select the same adjustment mode and color temperature in the COLOR menu for both INPUT 1 and INPUT 2.

2 Fine tune the color temperature in each menu for INPUT 1 and INPUT 2.
The settings are stored in memory for each of the INPUT 1 and INPUT 2 connectors.

For information on how to select the connector, see page 7.

sRGB mode

The sRGB color setting is an industry standard color space protocol designed to correlate the displayed and printed colors of sRGB compliant computer products. To adjust the colors to the sRGB profile, simply select the sRGB mode in the COLOR menu. However, in order to display the sRGB colors correctly (γ=2.2, 6500K), you must set your computer to the sRGB profile and adjust the brightness (☼) and contrast (◑) to the numbers shown in the menu. For information on how to change the brightness (☼) and contrast (◑), see page 9.

Note
Your computer and other connected products (such as a printer), must be sRGB compliant.

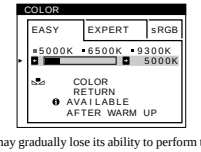
Restoring the color from the EASY or sRGB menus

The colors of most display monitors tend to gradually lose brilliance over several years of service. The COLOR RETURN feature found in the EASY and sRGB menus allows you to restore the color to the original factory quality levels. The explanation below explains how to restore the monitor's color from the EASY menu.

1 Press the ←/→ buttons to select EASY or sRGB mode.

2 First press the ↓/↑ buttons to select ⟲ (COLOR RETURN), then press the → button.
The picture disappears while the color is being restored (about 2 seconds). After the color is restored, the picture reappears on the screen again.

Notes
- Before using this feature, the monitor must be in normal operation mode (green power indicator on) for at least 30 minutes. If the monitor goes into power saving mode, you must return the monitor to normal operation mode and wait for 30 minutes for the monitor to be ready. You may need to adjust your computer's power saving settings to keep the monitor in normal operation mode for the full 30 minutes. If the monitor is not ready, the following message will appear.



- The monitor may gradually lose its ability to perform this function due to the natural aging of the picture tube.

Additional settings (OPTION)

You can manually degauss (demagnetize) the monitor, change the menu position, and lock the controls.

1 Press the ▭ button.
The main MENU appears on the screen.

2 Press the ↓/↑ buttons to highlight 🧰 OPTION and press the ▭ button again.
The OPTION menu appears on the screen.

3 Press the ↓/↑ buttons to select the desired adjustment item.
Adjust the selected item according to the following instructions.

Degaussing the screen

The monitor is automatically demagnetized (degaussed) when the power is turned on.
To manually degauss the monitor, first press the ↓/↑ buttons to select ⟳ (DEGAUSS). Then press the → button.
The screen is degaussed for about 2 seconds. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.

Changing the menu's position

Change the menu's position if it is blocking an image on the screen.
To change the menu's on-screen position, first press the ↓/↑ buttons to select ↔ (OSD H POSITION) for horizontal adjustment, or ↕ (OSD V POSITION) for vertical adjustment. Then press the ←/→ buttons to shift the on-screen menu.

Locking the controls

To protect adjustment data by locking the controls, first press the ↓/↑ buttons to select 🔒 (CONTROL LOCK). Then press the → button to select ON.
Only the ⏻ (power) switch, EXIT, and 🔒 (CONTROL LOCK) of the 🧰 OPTION menu will operate. If any other items are selected, the 🔒 mark appears on the screen.

To cancel the control lock
Repeat the procedure above and set 🔒 (CONTROL LOCK) to OFF.

GB

Resetting the adjustments

This monitor has the following three reset methods. Use the ⇢• (reset) button to reset the adjustments.

Resetting a single adjustment item

Use the ▭, ↓/↑ buttons to select the adjustment item you want to reset, and press the ⇢• (reset) button.

Resetting all of the adjustment data for the current input signal

Press the ⇢• (reset) button when no menu is displayed on the screen.

Note that the following items are not reset by this method:

- on-screen menu language (page 7)
- adjustment mode in the COLOR menu (EASY, EXPERT, sRGB) (page 12)
- on-screen menu position (page 13)
- control lock (page 13)

Resetting all of the adjustment data for all input signals

Press and hold the ⇢• (reset) button for more than two seconds.

Note

The ⇢• (reset) button does not function when 🔑 (CONTROL LOCK) is set to ON.

Technical Features

Preset Modes

Factory adjusted Timing Modes

Mode	Resolution (dots × lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	1280 × 1024	63.8 kHz	60 Hz	SGI Mode 7
2	1280 × 1024	76.9 kHz	72 Hz	SGI Mode 8
3	1280 × 1024	80.0 kHz	75 Hz	SGI Mode 9
4	1280 × 1024	81.9 kHz	76 Hz	SGI Mode10

Data Loaded Timing Modes

Mode	Resolution (dots × lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	800 × 600	76.7 kHz	120 Hz	SGI Mode 1
2	1024 × 768	48.7 kHz	60 Hz	SGI Mode 2
3	1024 × 768	77.5 kHz	96 Hz	SGI Mode 3
4	1024 × 768	97.0 kHz	120 Hz	SGI Mode 4
5	1280 × 492	63.8 kHz	120 Hz	SGI Mode 5
6	1280 × 1024	53.3 kHz	50 Hz	SGI Mode 6
7	1600 × 1024	77.6 kHz	72 Hz	SGI Mode11
8	1920 × 1035	65.0 kHz	60 Hz	SGI Mode12
9	640 × 480	31.5 kHz	60 Hz	VGA
10	800 × 600	37.9 kHz	60 Hz	VESA
11	800 × 600	46.9 kHz	75 Hz	VESA
12	800 × 600	53.7 kHz	85 Hz	VESA
13	1024 × 768	48.4 kHz	60 Hz	VESA
14	1024 × 768	56.5 kHz	70 Hz	VESA
15	1024 × 768	60.0 kHz	75 Hz	VESA
16	1024 × 768	68.7 kHz	85 Hz	VESA
17	1152 × 864	67.5 kHz	75 Hz	VESA
18	1280 × 960	60.0 kHz	60 Hz	VESA
19	1280 × 960	85.9 kHz	85 Hz	VESA
20	1280 × 1024	64.0 kHz	60 Hz	VESA
21	1280 × 1024	91.2 kHz	85 Hz	VESA
22	1600 × 1200	75.0 kHz	60 Hz	VESA
23	1600 × 1200	81.3 kHz	65 Hz	VESA
24	1600 × 1200	87.5 kHz	70 Hz	VESA
25	1600 × 1200	93.8 kHz	75 Hz	VESA
26	1600 × 1200	106.3 kHz	85 Hz	VESA

Power saving function

This monitor meets the power-saving guidelines set by VESA, ENERGY STAR, and NUTEK. If the monitor is connected to a computer or video graphics board that is DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

	Power consumption mode	Screen	Horizontal sync signal	Vertical sync signal	Power consumption	Recovery time	⏻ (power) indicator
1	Normal operation	active	present	present	≤ 145 W	—	Green
2	Standby (1st mode)	blank	absent	present	≤ 100 W	Approx. 3 sec.	Green and orange alternate
3	Suspend (2nd mode) (sleep)*	blank	present	absent	≤ 15 W	Approx. 3 sec.	Green and orange alternate
4	Active-off** (3rd mode) (deep sleep)*	blank	absent	absent	Approx. 1 W	Approx. 10 sec.	Orange
5	Power-off	—	—	—	0 W	—	Off

* "Sleep" and "deep sleep" are power saving modes defined by the Environmental Protection Agency.

** When your computer enters a power saving mode, the input signal is cut and NO INPUT SIGNAL appears on the screen. After a few seconds, the monitor enters power saving mode.

Plug & Play

This monitor complies with the DDC™1, DDC2B and DDC2Bi Display Data Channel (DDC) standards of VESA.
When a DDC1 host system is connected, the monitor synchronizes with the V. CLK in accordance with the VESA standards and outputs the EDID (Extended Display Identification Data) to the data line.
When a DDC2B or DDC2Bi host system is connected, the monitor automatically switches to the appropriate standard.

DDC™ is a trademark of the Video Electronics Standard Association.

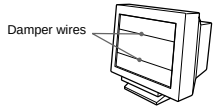
GB

Troubleshooting

Before contacting technical support, refer to this section.

If thin lines appear on your screen (damper wires)

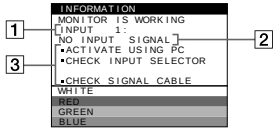
The lines you are experiencing on your screen are normal for the Trinitron monitor and are not a malfunction. These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white). The aperture grille is the essential element that makes a Trinitron picture tube unique by allowing more light to reach the screen, resulting in a brighter, more detailed picture.



On-screen messages

If there is something wrong with the input signal, one of the following messages appears on the screen.

If NO INPUT SIGNAL appears on the screen



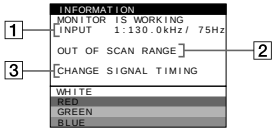
1 The selected connector
This message shows the currently selected connector (INPUT 1 or INPUT 2).

2 The input signal condition
NO INPUT SINGAL
This indicates that no signal is input, or that no signal is input from the selected connector.

3 The remedies
One or more of the following messages may appear on the screen.

- If ACTIVATE USING PC appears on the screen, try pressing any key on the computer, and confirm that your computer's graphic board is completely seated in the correct bus slot.
- If CHECK INPUT SELECTOR appears on the screen, try changing the input signal (page 7).
- If CHECK SIGNAL CABLE appears on the screen, check that the monitor is correctly connected to the computer (page 6).

If OUT OF SCAN RANGE appears on the screen



1 The selected connector and the frequencies of the current input signal
This message shows the currently selected connector (INPUT 1 or INPUT 2). If the monitor recognizes the frequencies of the current input signal, the horizontal and vertical frequencies are also displayed.

2 The input signal condition
OUT OF SCAN RANGE
This indicates that the input signal is not supported by the monitor's specifications.

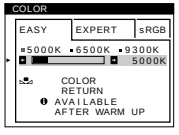
3 The remedies
CHANGE SIGNAL TIMING appears on the screen. If you are replacing an old monitor with this monitor, reconnect the old monitor. Then adjust the computer's graphic board to that the horizontal frequency is between 30 - 121 kHz, and the vertical frequency is between 48 - 160 Hz.

For more information, see "Trouble symptoms and remedies" on page 17.

Trouble symptoms and remedies

If the problem is caused by the connected computer or other equipment, please refer to the connected equipment's instruction manual. Use the self-diagnosis function (page 19) if the following recommendations do not resolve the problem.

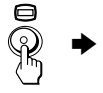
Symptom	Check these items
No picture	
If the ⏻ (power) indicator is not lit	• Check that the power cord is properly connected. • Check that the ⏻ (power) switch is in the "on" position.
If the NO INPUT SIGNAL message appears on the screen, or if the ⏻ (power) indicator is either orange or alternating between green and orange	• Check that the ⏎ switch setting is correct (page 7). • Check that the HD15 video input connector's pins are not bent or pushed in. **■Problems caused by the connected computer or other equipment** • The computer is in power saving mode. Try pressing any key on the computer keyboard. • Check that the computer's power is "on." • Check that the graphic board is completely seated in the proper bus slot.
If the NO INPUT SIGNAL and CHECK SIGNAL CABLE message appear on the screen, or if the ⏻ (power) indicator is either orange or alternating between green and orange	• Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets (page 6). • Check that the HD15 video input connector's pins are not bent or pushed in. • Check that the ⏎ switch setting is correct (page 7). **■Problems caused by the connected computer or other equipment** • Check that the graphic board is completely seated in the proper bus slot.
If the OUT OF SCAN RANGE message appears on the screen	**■Problems caused by the connected computer or other equipment** • Check that the video frequency range is within that specified for the monitor. If you replaced an old monitor with this monitor, reconnect the old monitor and adjust the frequency range to the following. Horizontal: 30 – 121 kHz Vertical: 48 – 160 Hz
If no message is displayed and the ⏻ (power) indicator is green or flashing orange	• Use the Self-diagnosis function (page 19).
Picture flickers, bounces, oscillates, or is scrambled	• Isolate and eliminate any potential sources of electric or magnetic fields such as other monitors, laser printers, electric fans, fluorescent lighting, or televisions. • Move the monitor away from power lines or place a magnetic shield near the monitor. • Try plugging the monitor into a different AC outlet, preferably on a different circuit. • Try turning the monitor 90° to the left or right. **■Problems caused by the connected computer or other equipment** • Check your graphics board manual for the proper monitor setting. • Confirm that the graphics mode and the frequency of the input signal are supported by this monitor. Even if the frequency is within the proper range, some video boards may have a sync pulse that is too narrow for the monitor to sync correctly. • Adjust the computer's refresh rate (vertical frequency) to obtain the best possible picture.
Picture is fuzzy	• Adjust the brightness and contrast (page 9). • Degauss the monitor* (page 13). • If CANCEL MOIRE is ON, the picture may become fuzzy. Decrease the moire cancellation effect or set CANCEL MOIRE to OFF (page 11).

Symptom	Check these items
Picture is ghosting	• Eliminate the use of video cable extensions and/or video switch boxes. • Check that all plugs are firmly seated in their sockets.
Picture is not centered or sized properly	• Press the ⊡ button (page 7). • Adjust the size (page 10) or centering (page 10). Note that some video modes do not fill the screen to the edges.
Edges of the image are curved	• Adjust the geometry (page 10).
Wavy or elliptical pattern (moire) is visible	• Set CANCEL MOIRE to ON and adjust the degree of moire cancellation until the moire is at a minimum (page 11). **■Problems caused by the connected computer or other equipment** • Change your desktop pattern.
Color is not uniform	• Degauss the monitor* (page 13). If you place equipment that generates a magnetic field, such as a speaker, near the monitor, or if you change the direction the monitor faces, color may lose uniformity. • Adjust the landing (page 11).
White does not look white	• Adjust the color temperature (page 12).
Letters and lines show red or blue shadows at the edges	• Adjust the convergence (page 11).
Monitor buttons do not operate (🔑 appears on the screen)	• If the control lock is set to ON, set it to OFF (page 13).
COLOR RETURN function does not operate 	• Before using this function, the monitor must be in normal operation mode (green power indicator on) for at least 30 minutes. For more information on using the COLOR RETURN function, see page 13. • Adjust the computer's power saving settings to keep the monitor in normal operation mode for more than 30 minutes. • The monitor may gradually lose its ability to perform this function due to the natural aging of the picture tube.
A hum is heard right after the power is turned on	• This is the sound of the auto-degauss cycle, which is normal. When the power is turned on, the monitor is automatically degaussed for two seconds.

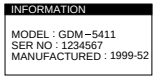
* If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. A humming noise may be heard, but this is not a malfunction.

Displaying this monitor's name, serial number, and date of manufacture.

While the monitor is receiving a video signal, press and hold the ⊡ button for more than five seconds to display this monitor's information box.

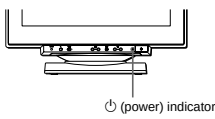


Example



Self-diagnosis function

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer(s), the screen will go blank and the ⏻ (power) indicator will either light up green or flash orange. If the ⏻ (power) indicator is lit in orange, the computer is in power saving mode. Try pressing any key on the keyboard.



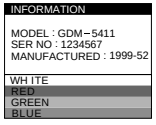
If the ⏻ (power) indicator is green

1 Remove any plugs from the video input 1 and 2 connectors, or turn off the connected computer(s).

2 Press the ⏻ (power) button twice to turn the monitor off and then on.

3 Press the ➡ button for 2 seconds before the monitor enters power saving mode.

If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cables and check the condition of your computer(s).



If the color bars do not appear, there is a potential monitor failure. Inform your service representative of the monitor's condition.

If the ⏻ (power) indicator is flashing orange

Press the ⏻ (power) button twice to turn the monitor off and then on.
If the ⏻ (power) indicator lights up green, the monitor is working properly.

If the ⏻ (power) indicator is still flashing, there is a potential monitor failure. Count the number of seconds between orange flashes of the ⏻ (power) indicator and inform your service representative of the monitor's condition. Be sure to note the model name and serial number of your monitor.

Specifications

CRT	0.24 mm aperture grille pitch 21 inches measured diagonally 90-degree deflection FD Trinitron
Viewable image size	Approx. 403.8 × 302.2 mm (w/h) (16 × 12 inches) 19.8" viewing image
Recommended resolution	Horizontal: 1600 dots Vertical: 1280 lines
Standard image area	Approx. 388 × 291 mm (w/h) ($15\ ^{3}/_{8} \times 11\ ^{1}/_{2}$ inches) or Approx. 364 × 291 mm (w/h) ($14\ ^{3}/_{8} \times 11\ ^{1}/_{2}$ inches)
Deflection frequency*	Horizontal: 30 to 121 kHz Vertical: 48 to 160 Hz
AC input voltage/current	100 to 240 V, 50 – 60 Hz, 2.0 – 1.0 A
Power consumption	Approx. 145 W
Dimensions	Approx. 498 × 491 × 478 mm (w/h/d) ($19\ ^{5}/_{8} \times 19\ ^{3}/_{8} \times 18\ ^{7}/_{8}$ inches)
Mass	Approx. 32 kg (70 lb 9 oz)
Plug and Play	DDC1/2B/2Bi, GTF**

* Recommended horizontal and vertical timing condition
- Horizontal sync width duty should be more than 4.8% of total horizontal time or 0.8 µs, whichever is larger.
- Horizontal blanking width should be more than 2.3 µsec.
- Vertical blanking width should be more than 450 µsec.

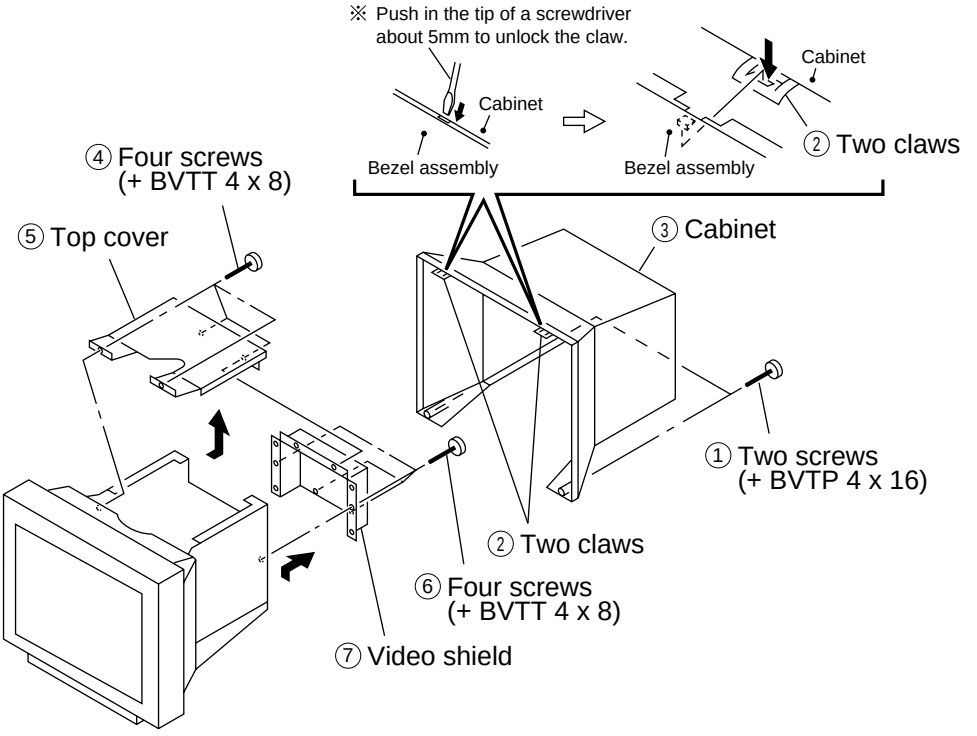
** If the input signal is Generalized Timing Formula (GTF) compliant, the GTF feature of the monitor will automatically provide an optimal image for the screen.

Design and specifications are subject to change without notice.

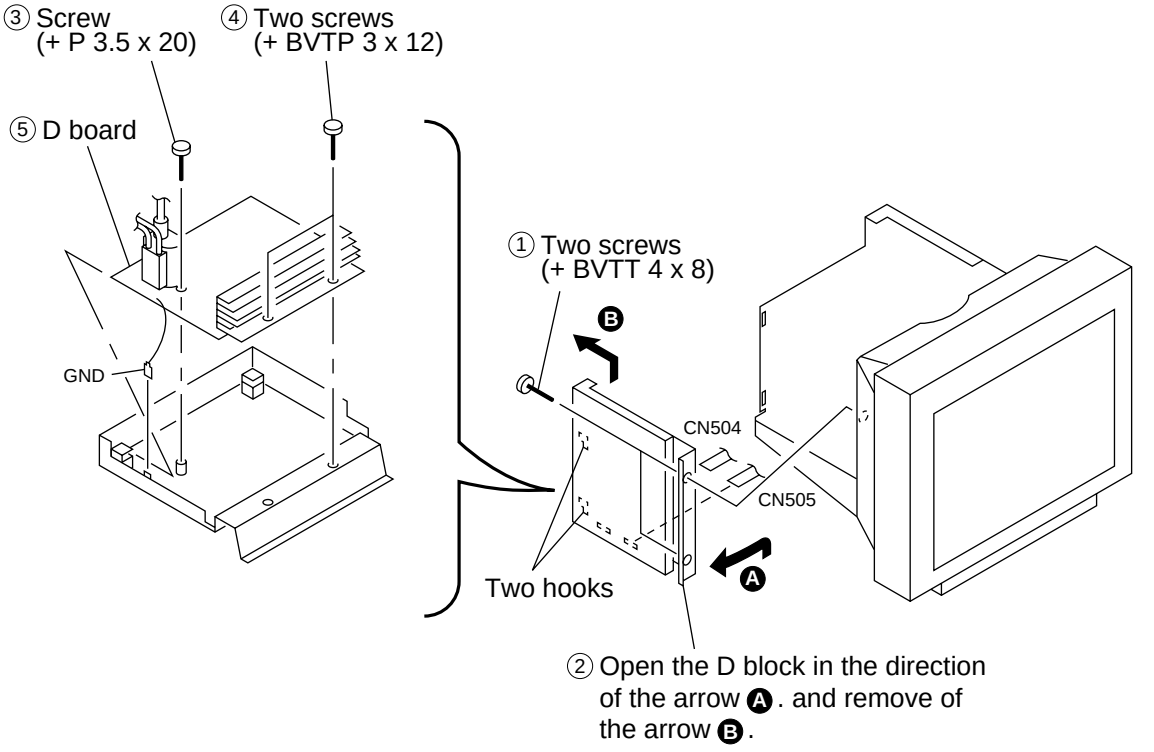
GB

SECTION 2
DISASSEMBLY

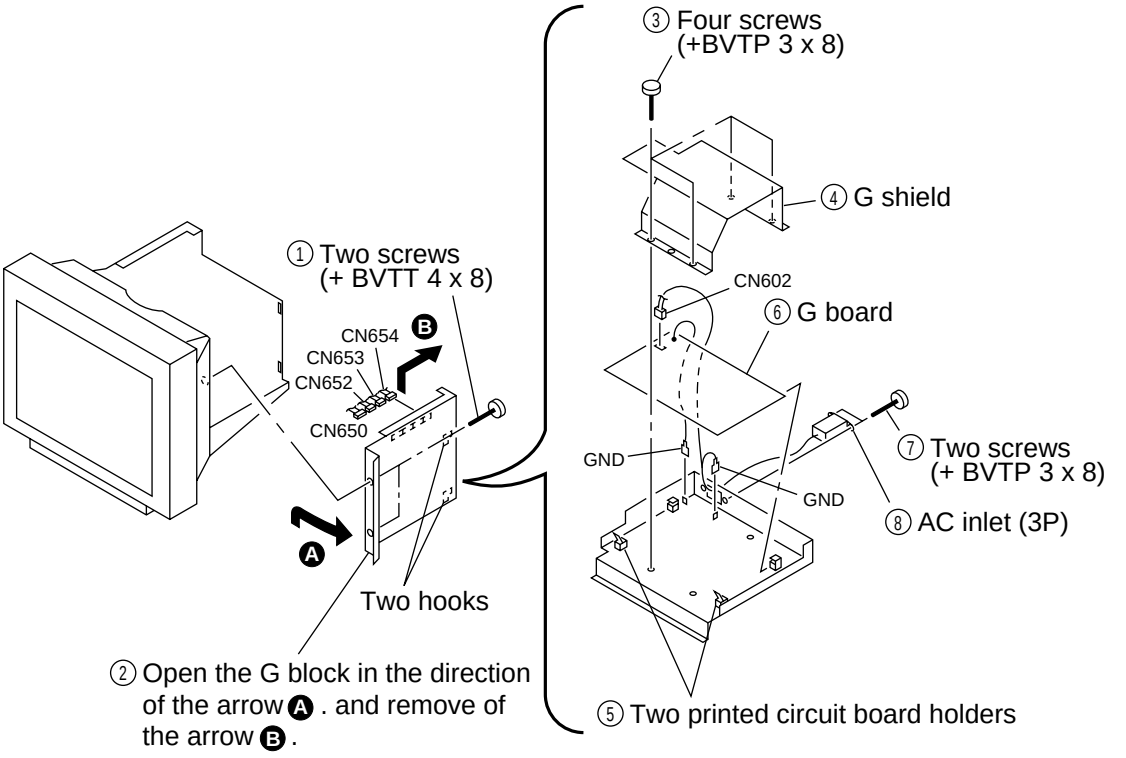
2-1. CABINET REMOVAL



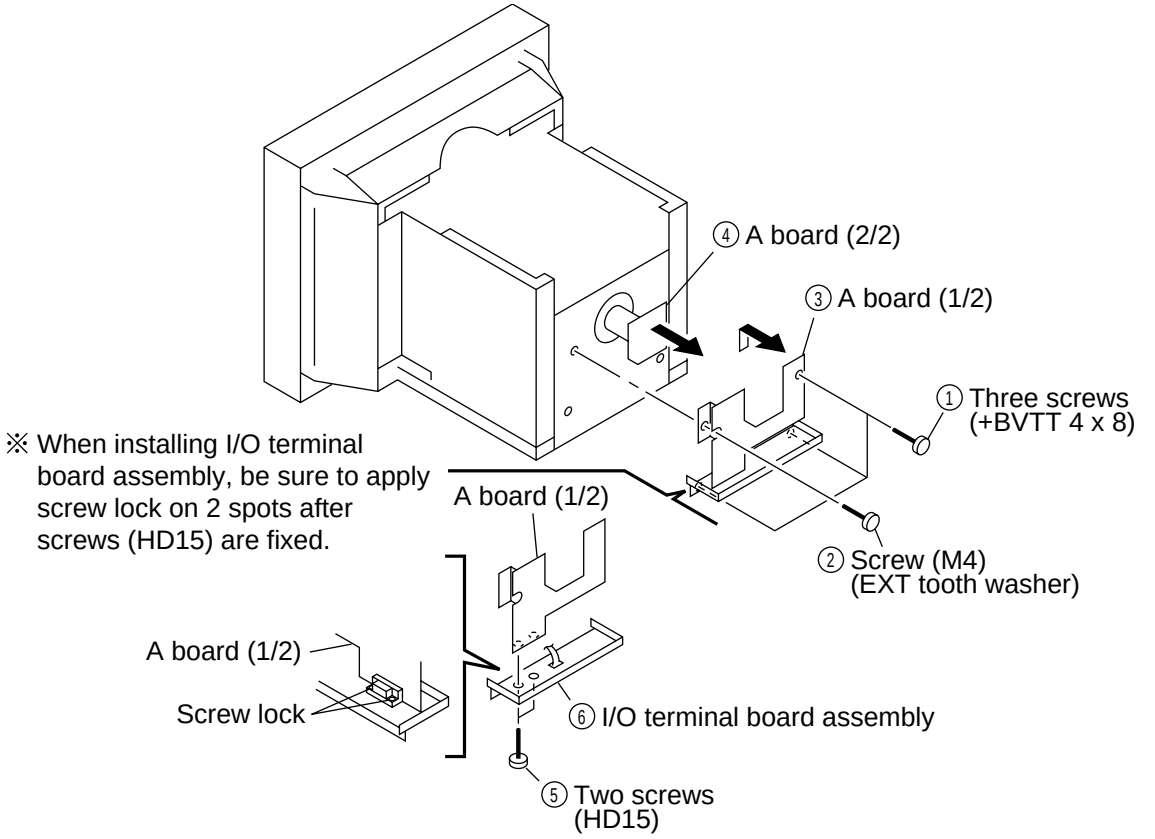
2-2. D BOARD REMOVAL



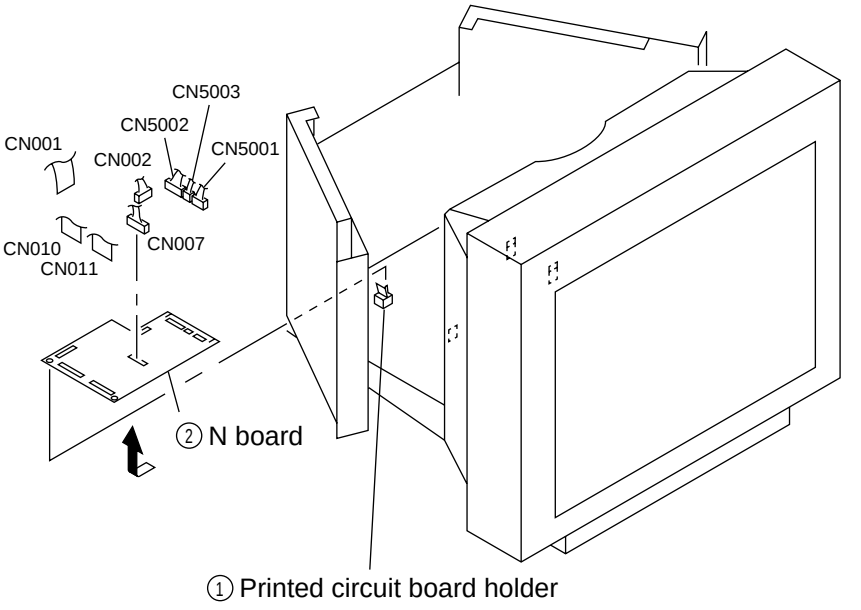
2-3. G BOARD REMOVAL



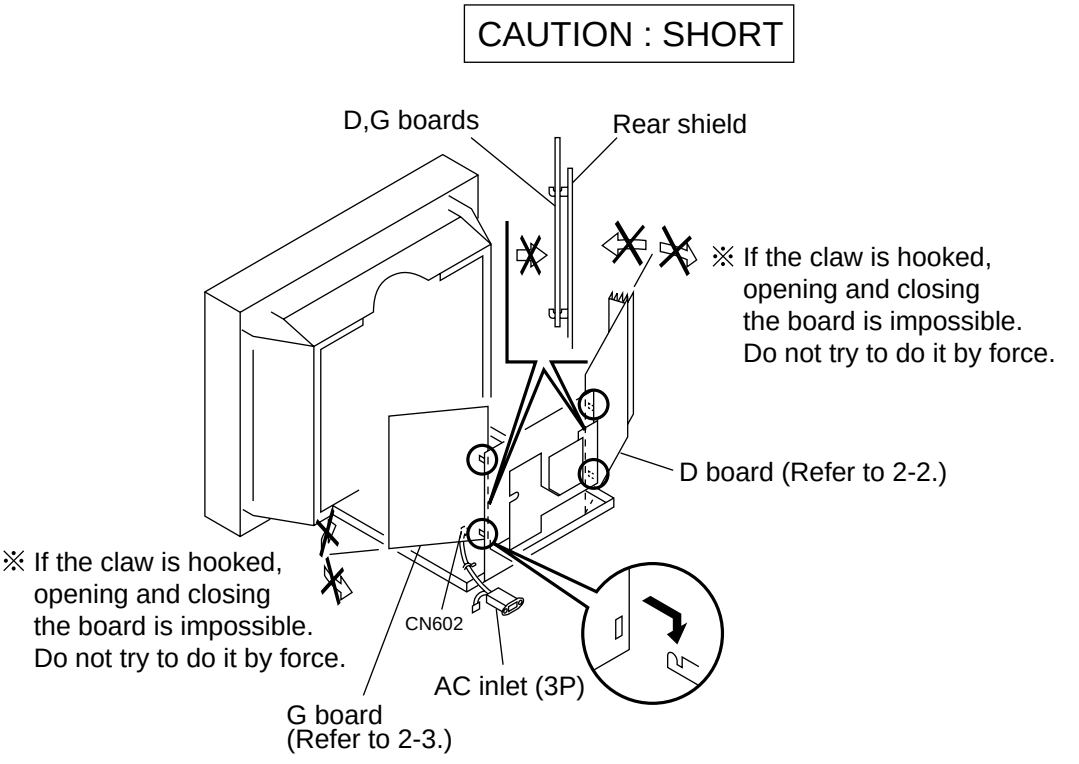
2-4. A BOARD, I/O TERMINAL BOARD ASSEMBLY REMOVAL



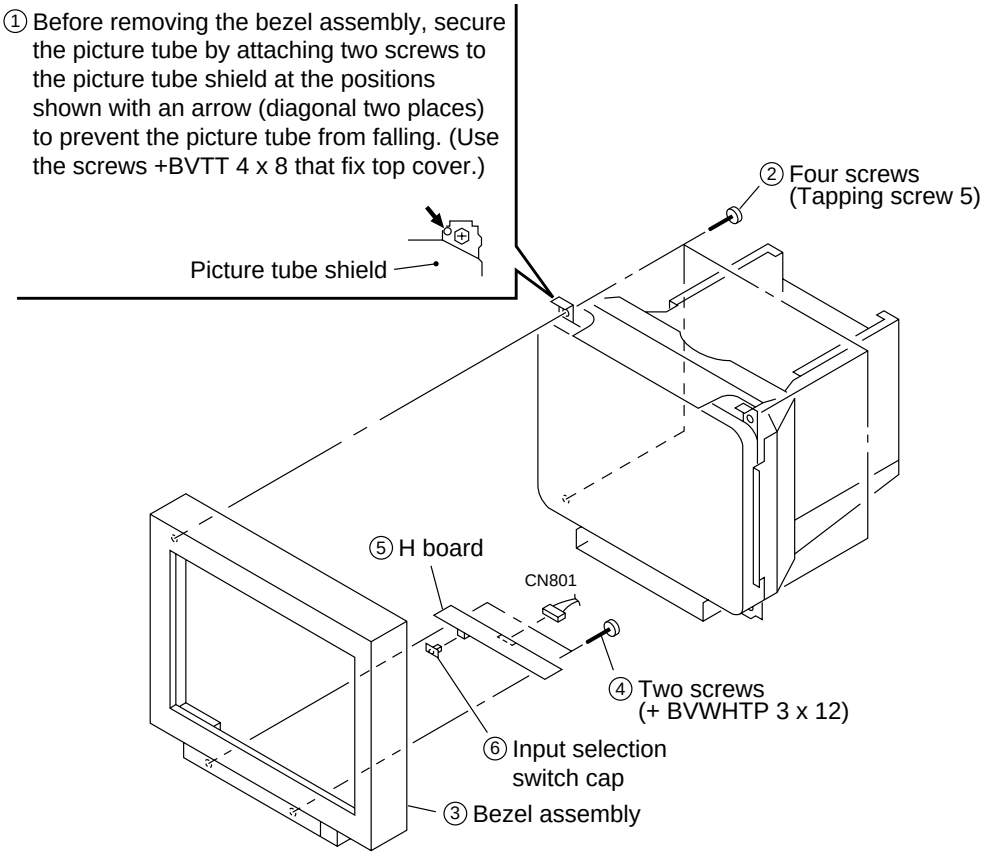
2-5. N BOARD REMOVAL



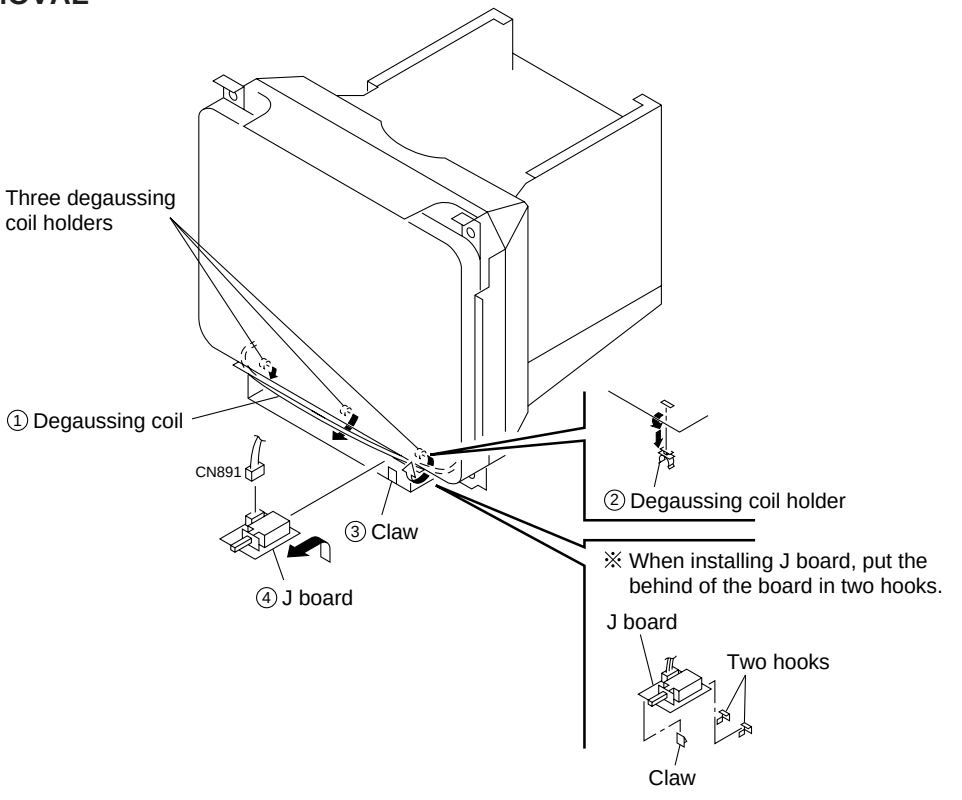
2-6. SERVICE POSITION



2-7. BEZEL ASSEMBLY, H BOARD REMOVAL

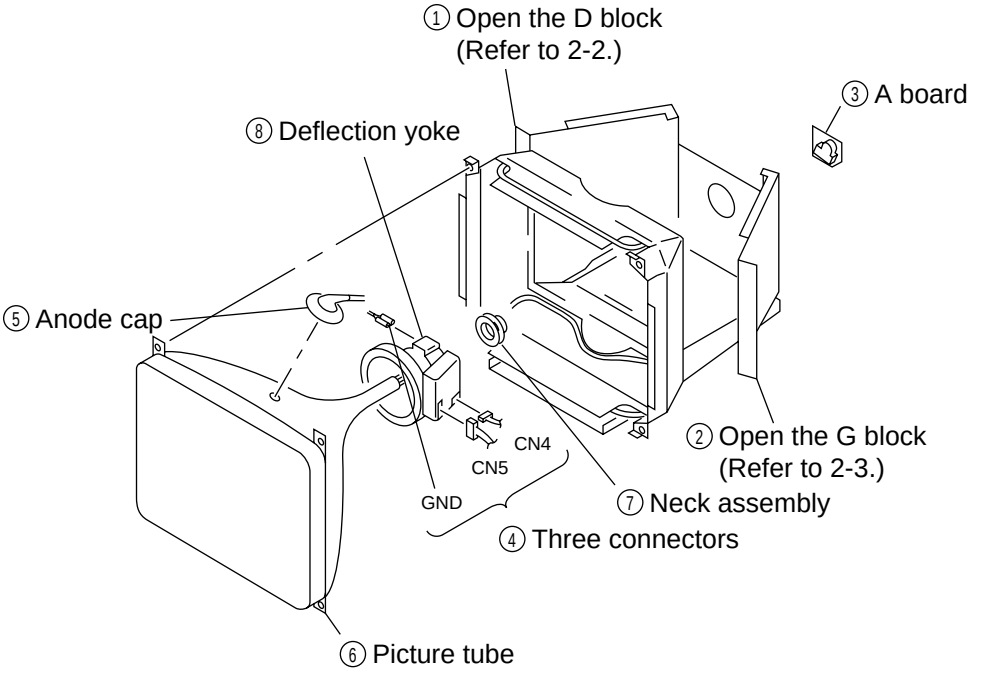


2-8. J BOARD REMOVAL



2-9. PICTURE TUBE REMOVAL

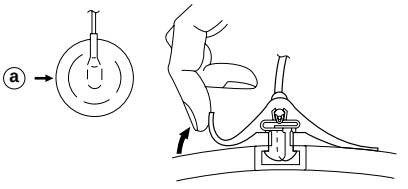
※ Remove the bezel assembly. (Refer to 2-7)



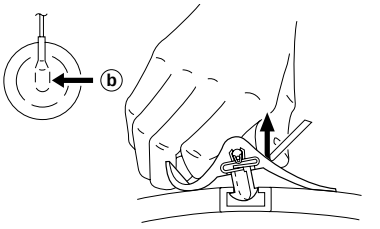
• REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon painted on the CRT, after removing the anode.

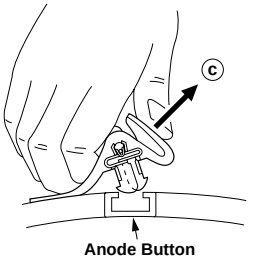
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



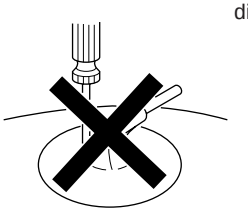
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

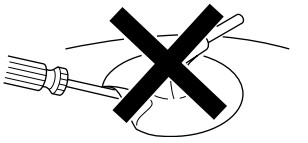
• HOW TO HANDLE AN ANODE-CAP

① Don't scratch the surface of anode-caps with sharp shaped material!

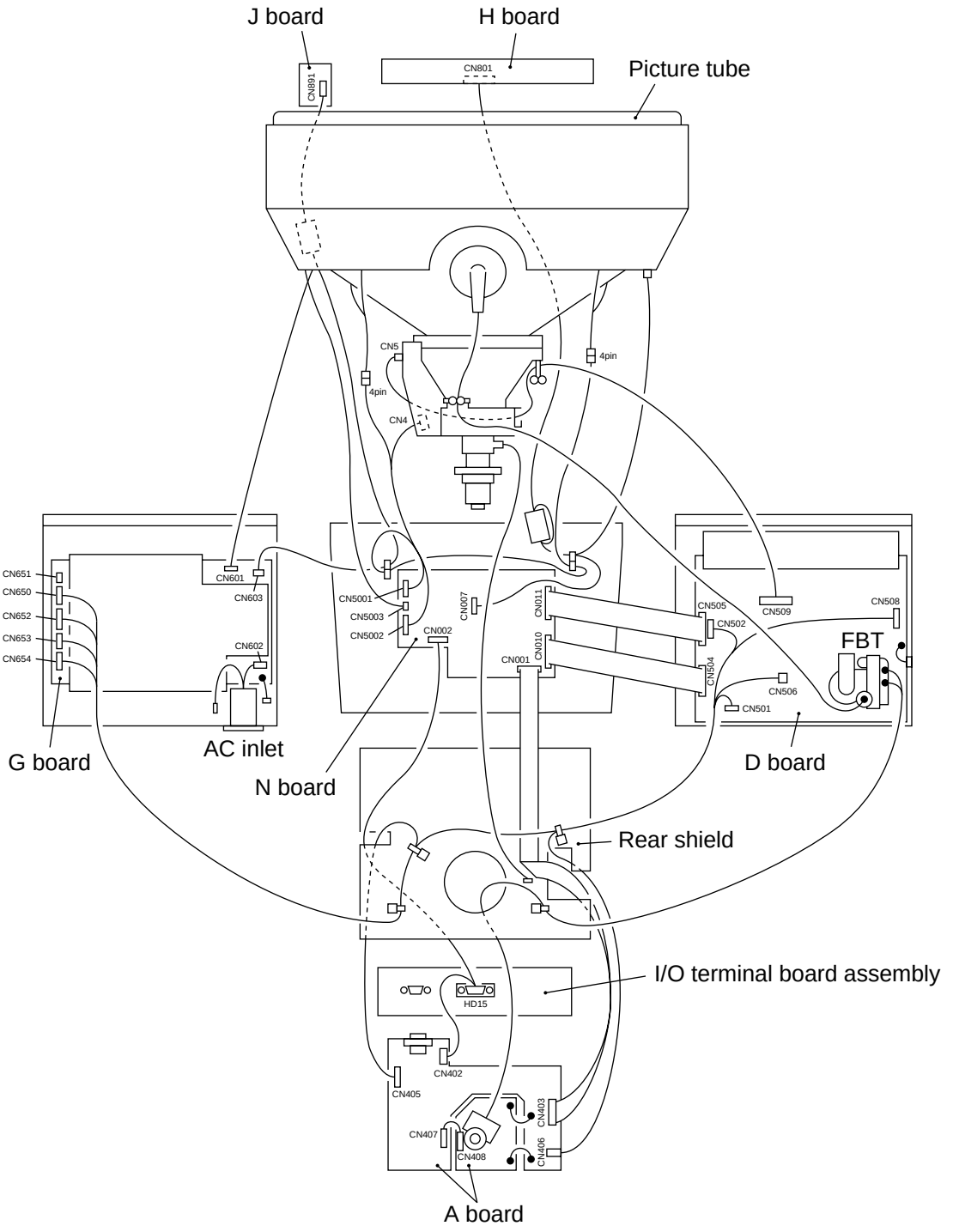
② Don't press the rubber hardly not to damage inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or damage the rubber.





2-10. HARNESS LOCATION



SECTION 3
SAFETY RELATED ADJUSTMENT

When replacing or repairing the shown below table, the following operational checks must be performed as a safety precaution against X-rays emissions from the unit.

	Part Replaced (⊠)
HV ADJ	RV901

	Part Replaced (◪)	
HV Regulator Circuit Check	D Board	C920, IC901, R923 R924, R929, R945, RV901, T902 (FBT) • Mounted D Board
HV Protector Circuit Check	D Board	C922, C925, C926, D912, D914, D915, D921, Q907, Q908, R921, R922, R932, R937, R939, T902 (FBT) • Mounted D Board
Beam Current Protector Circuit Check	D Board	C910, C921, C933, D901, D902, D913, IC503, IC901, R901, R920, R928, R930, R931, R940, R941, T902 (FBT) • Mounted D Board
	G Board	IC652 • Mounted G Board
	N Board	IC001, R031, R032 • Mounted N Board

* Confirm one minute after turning on the power.

a) HV Regulator Circuit Check

1) Enter black crosshatch signal (black on white background), and check that high voltage is in the specified range.
   [Specification]: 27.00 ± 0.10 kV
2) Check that the voltage of D912 cathode on the D board is 27.0 V or more.

b) HV Protector Circuit Check

1) Enter black crosshatch signal (black on white background).
2) Apply the specified voltage to the D912 cathode on the D board, and check that high voltage is 0.1 kV or less.
   [Specification]: 31.90 + 0.00/– 0.05 V

c) Beam Current Protector Circuit Check (1st Protector): D Board

1) Apply 4.5 V DC to CN504 ⑩ pin on the D board, and check high voltage value.
2) Connect constant current source to a section between T902 (FBT) ⑪ pin and ⑫ pin (GND) on the D board, and check that high voltage checked in 1) lowers by 1.50 kV or more when the specified current flows to the ⑪ pin.
   [Specification]: 2.00 + 0.00/– 0.01 mA

d) Beam Current Protector Circuit Check (2nd Protector): D Board

1) Connect constant current source to a section between T902 (FBT) ⑪ pin and ⑫ pin (GND) on the D board, and check that the voltage of CN504 ⑩ pin becomes 0 V or less when the specified current flows to the ⑪ pin.
   [Specification]: 1.70 + 0.00/– 0.01 mA

e) Beam Current Protector Circuit Check : G Board

1) Apply 264 V AC.
2) Enter about 5 V to CN650 ④ pin on the G board, and check that the output voltage of CN653 ② pin is about 15 V.
3) Enter about 0 ± 0.2 V to CN654 ④ pin, and check that the output voltage of CN653 ② pin becomes 1.0 V or less.

f) Beam Current Protector Circuit Check : N Board

1) Check that the protector operates, when the voltage of CN010 ⑯ pin on the N board is lowered to 0 V or less (for more than 2 seconds).

SECTION 4
ADJUSTMENTS

Note: Hand degauss must be used on stand-by or power-off condition.
This model has an automatic earth magnetism correction function by using an earth magnetism sensor and a LCC coil. When using a hand degauss while monitor (LCC coil) is being operated, it sometimes gets magnetized, and the system may not work properly as a result.

• Landing Rough Adjustment

1. Enter the full white signal. (or the full black dots signal).
2. Adjust the contrast to the maximum.
3. Make the screen monogreen.

Note: Off the outputs from R ch and B ch of SG.

4. Reverse the DY, and adjust coarsely the purity magnet so that a green raster positions in the center of screen.
5. Adjust the tilt of DY, and fix lightly with a clamp.

Note: "TILT" = "128".

• Landing Fine Adjustment

1. Put the set inside the Helmholtz coil. ("LCC SW" = "12")
2. Input the single green signal and set the "CONTRAST" = "255".

Note: After the W/B adjustment with 9300 K, measure an average of ΣIk when a full white signal is entered in the CONT MAX/BRT CENT status. Then make adjustment so that the specified screen can be attained after aging for 2 hours with Ik equivalent to 30% of the average value.

3. Demagnetize the metal part of the chassis with the hand degausser and coil degausser, and the CRT surface with the hand degausser.
   Input AC 230V to AC IN, turn on and off the power to perform auto degaussing. (Perform auto degaussing by setting "FUNCTION SW" = 1. Return to the original value after use.)
   Demagnetize the CRT surface with the hand degausser again.

Note:

(1) Hand degauss must be used on stand-by or power-off condition.
   This model has an automatic earth magnetism correction function by using an earth magnetism sensor and a LCC coil. When using a hand degauss while monitor (LCC coil) is being operated, it sometimes gets magnetized, and the system may not work properly as a result.
(2) Adjust in a non-magnetic field.
(3) If adjusting in a magnetic fields, add the shift from the non-magnetic field in your estimation.

4. Attach the wobbling coil to the designated part of the CRT neck.
5. Attach the sensor of the landing adjustment unit on the CRT surface.
6. Adjust the DY position and purity, and the DY tilt, and landing of the center and 4 corners with the landing checker.
   After adjustment, set "LCC SW" to "13".
   • Write terrestrial magnetism sensor reading VX and VY to "LCC VX" and LCC VY" respectively. Adjust the landing by moving "LCC NS", "LCC LT", "LCC LB", "LCC RT" and "LCC RB". However, the register adjustment must be limited within the following range.
   "LCC NS" 128 ± 15
   "LCC LT", "LCC LB", "LCC RT", "LCC RB" 128 ± 40
   Save the service data.

<Specifications>
Adjust so that the green is within the specification given right.
4 corner adjust target : within ± 1

(μm)

0 ± 3	0 ± 7.5	0 ± 3
0 ± 3	0 ± 7.5	0 ± 3
0 ± 3	0 ± 7.5	0 ± 3

The red and blue must be within the specification given right with respect to the green.

(μm)

± 6	± 6	± 6
± 6	± 6	± 6
± 6	± 6	± 6

A difference between red and blue must be within the specification given right.

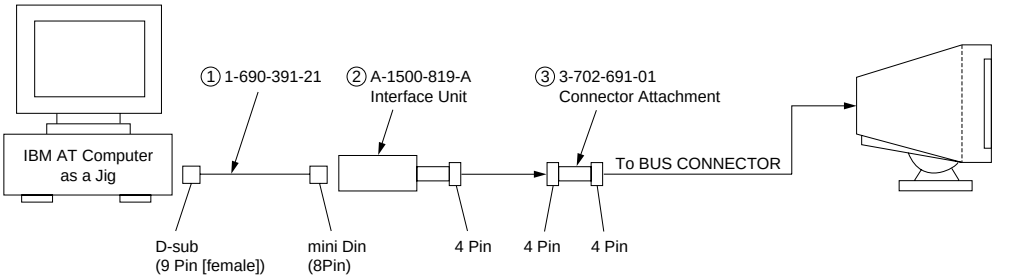
(μm)

10	10	10
10	7	10
10	10	10

* Adjustment and measurement should be made at the points one inch inside the fluorescent screen.

7. For the up/down swing, swing the DY and insert a wedge so that the up and down pins are equal at the top and bottom. Adjust the H.TRP VR of DY so that the horizontal trapezoid is equal at the left and right. Insert the wedge firmly so that the DY does not shake.
8. Check the landing of each corner, and if it does not satisfy the specification, adjust the landing of four corners using "LCC LT", "LCC LB", "LCC RT" and "LCC RB".
   However, the register adjustment must be limited within the following range.
   "LCC NS" 128 ± 15
   "LCC LT", "LCC LB", "LCC RT", "LCC RB" 128 ± 40
   After adjustment, save the service data.
9. Remove the sensor and wobbling coil.
10. Switch the signal to R.G.B., and check that each color is pure.
11. Check that the DY is not tilting, and fix the purity Mg with a white pen. Fix wedges with RTV.

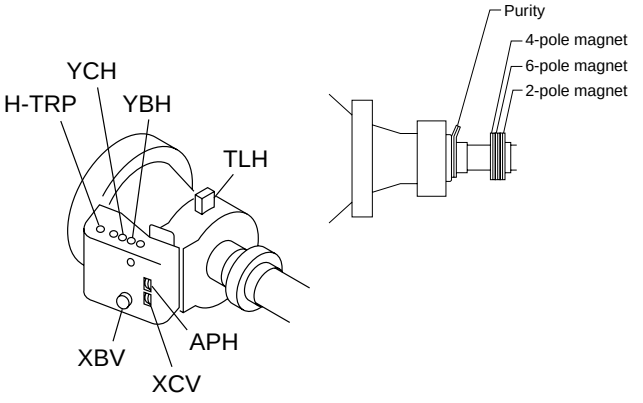
Connect the communication cable of the computer to the connector located on the D board. Run the service software and then follow the instruction.



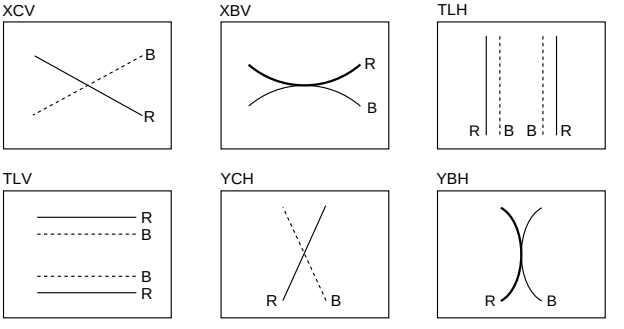
*The parts above (① ~ ③) are necessary for DAS adjustment.

- **Convergence Rough Adjustment**

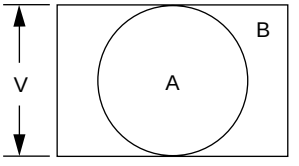
(1) Receive an image of the white crosshatch signals (white lines on black).
(2) Place the protrusions of the 6-fold poles magnet attached to the CRT neck upon each other.
(3) Make rough adjustment of the H and V direction convergence by using 4-fold poles magnet.



* Set so that the protruding parts of the 2 magnet rings agree with each other.



- **Convergence Specification**

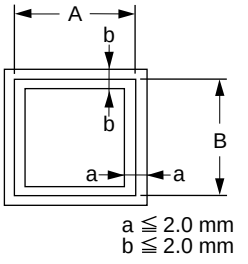


fH	60kHz ≦	60kHz>
A	0.20 mm	0.24 mm
B	0.24 mm	0.28 mm

- **White Balance Adjustment Specification**

1. 9300 K
   x = 0.283 ± 0.005
   y = 0.298 ± 0.005
   (All White)
2. 6500 K
   x = 0.313 ± 0.005
   y = 0.329 ± 0.005
   (All White)
3. 5000 K
   x = 0.346 ± 0.005
   y = 0.359 ± 0.005
   (All White)

- **Vertical and Horizontal Position and Size Specification**

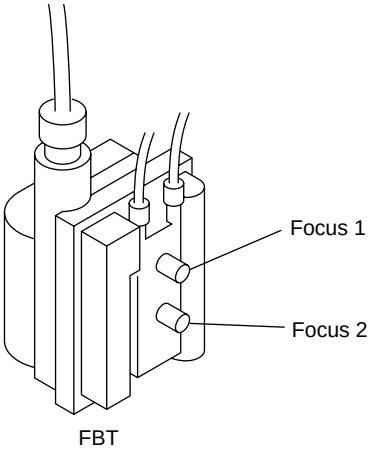


a ≦ 2.0 mm
b ≦ 2.0 mm

MODE	4 : 3	5 : 4
A	388	364
B	291	291

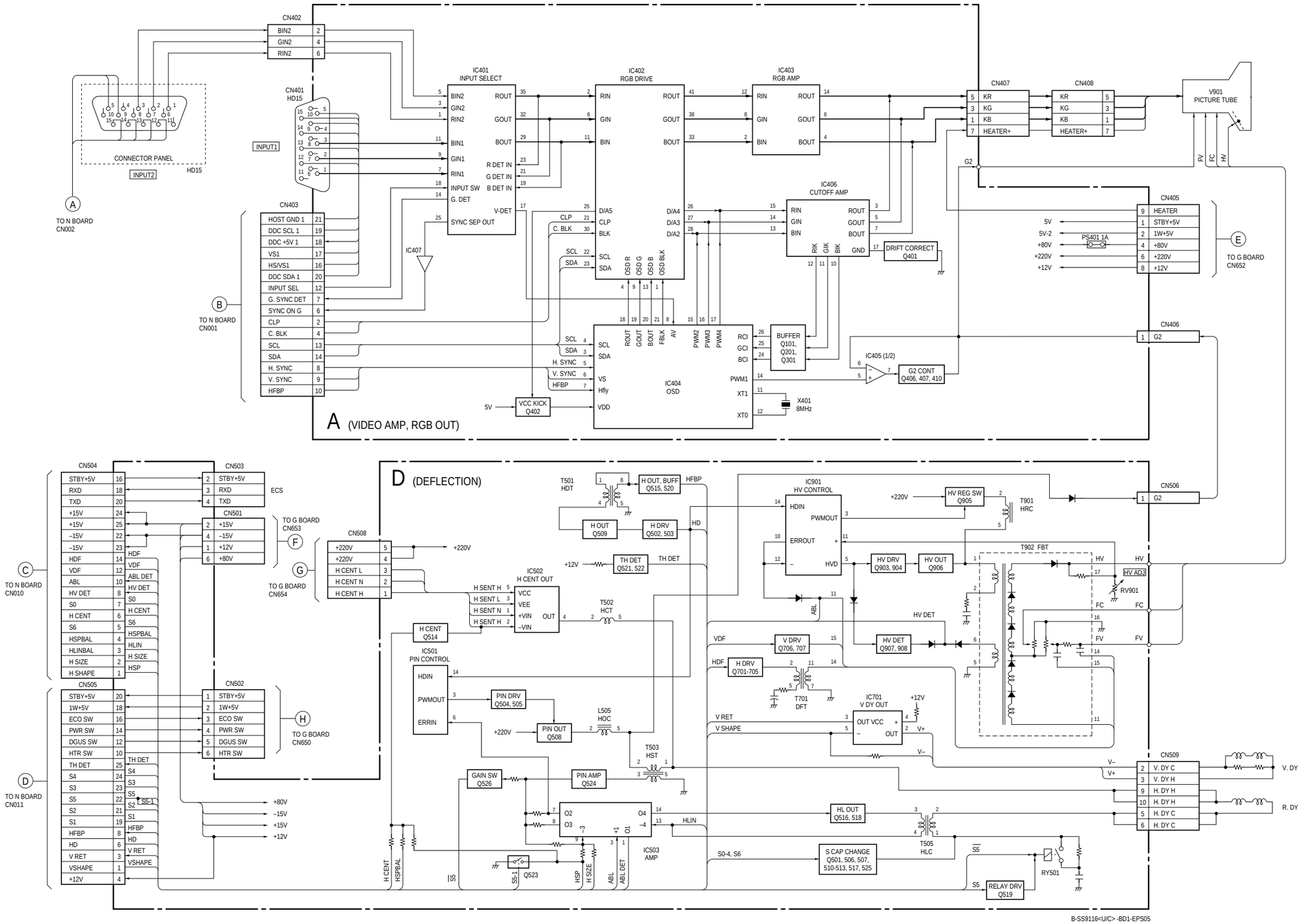
- **Focus adjustment**

Adjust the focus volume 1 and 2 for the optimum focus.



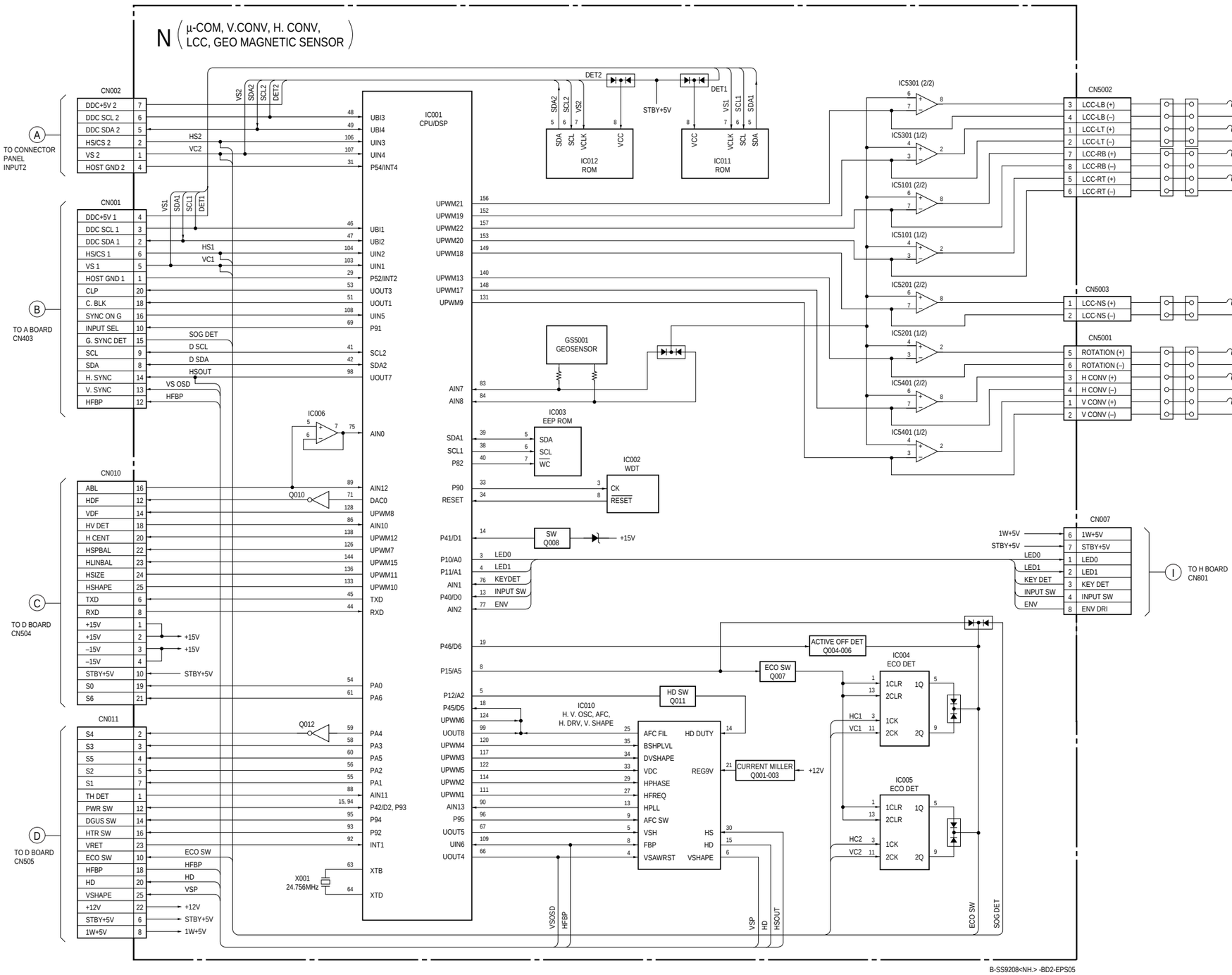
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAMS

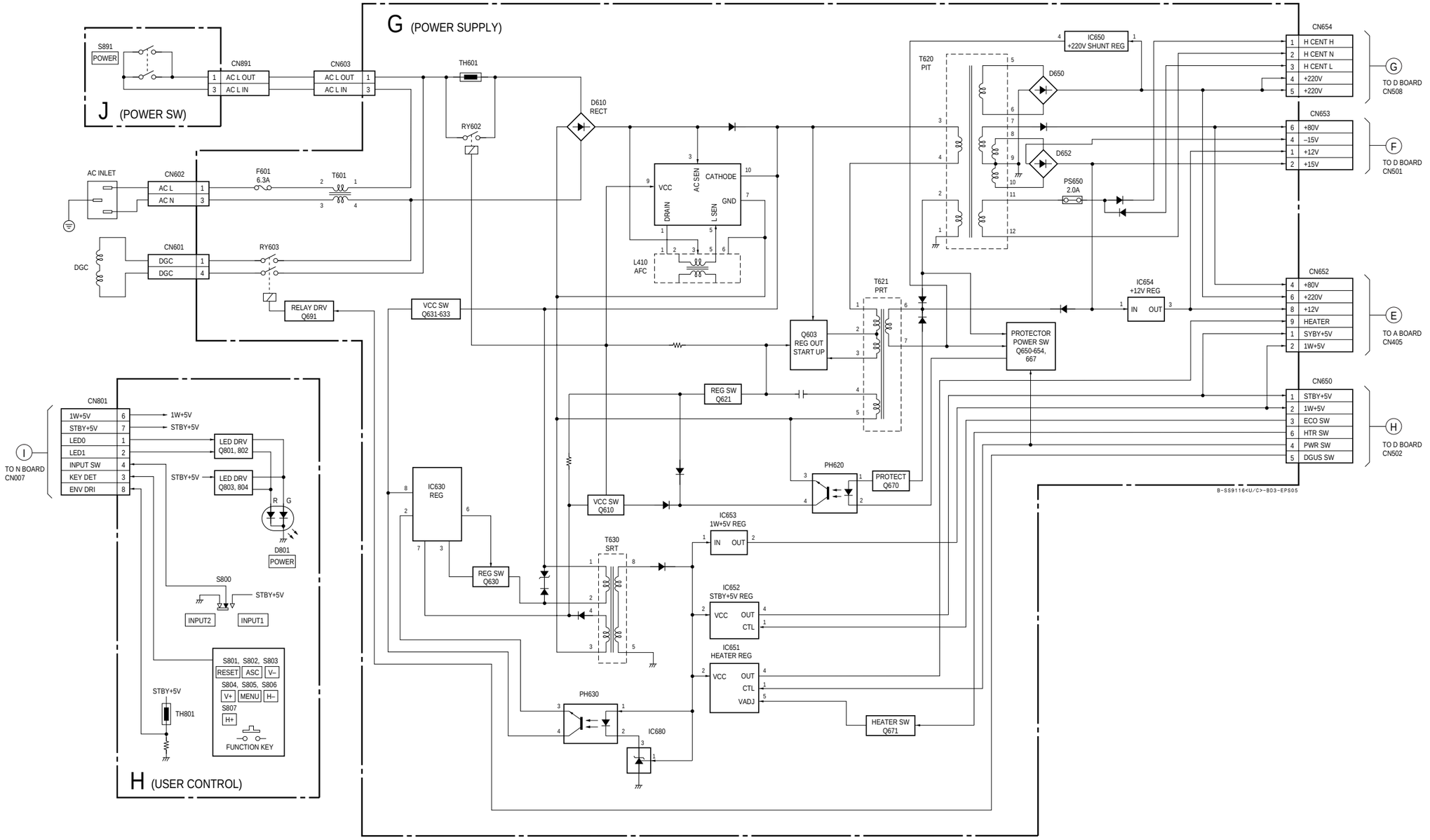


B-SS9116<U/C> -BD1-EPS05

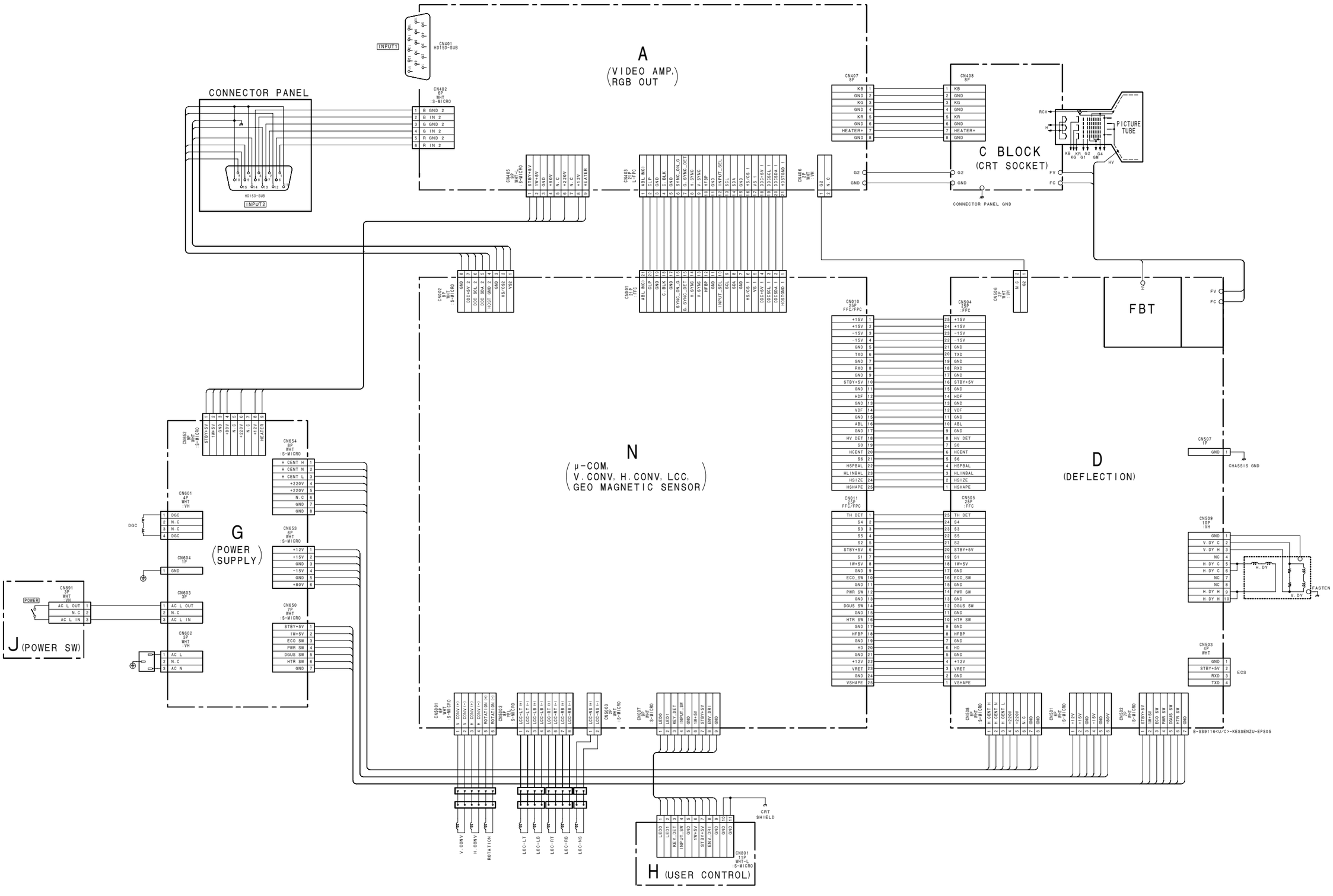
N (µ-COM, V.CONV, H. CONV, LCC, GEO MAGNETIC SENSOR)



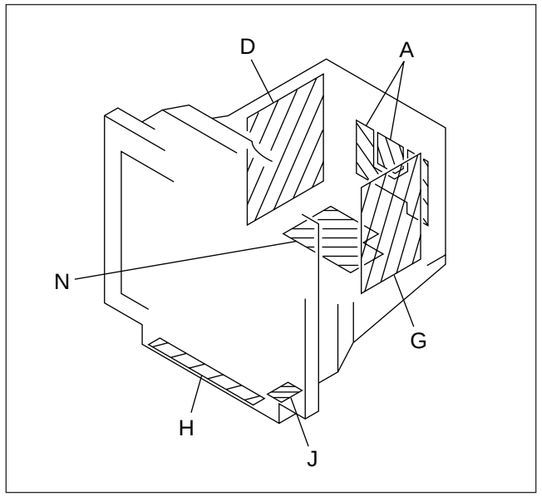
B-SS9208<NH.> -BD2-EPS05


G (POWER SUPPLY)
J (POWER SW)
H (USER CONTROL)
S891
POWER
CN891
CN603
AC L OUT
AC L IN
TH601
RY602
D610
RECT
AC INLET
CN602
AC L
AC N
F601
6.3A
T601
DGC
CN601
RY603
RELAY DRV
Q691
VCC SW
Q631-633
VCC
AC SEN
CATHODE
GND
DRAIN
L SEN
L410
AFC
T620
PIT
D650
D652
PS650
2.0A
IC650
+220V SHUNT REG
T621
PRT
IC654
+12V REG
IN
OUT
Q603
REG OUT
START UP
REG SW
Q621
PROTECTOR
POWER SW
Q650-654,
667
CN654
H CENT H
H CENT N
H CENT L
+220V
+220V
TO D BOARD
CN508
CN653
+80V
–15V
+12V
+15V
TO D BOARD
CN501
CN652
+80V
+220V
+12V
HEATER
SYBY+5V
1W+5V
TO A BOARD
CN405
CN650
STBY+5V
1W+5V
ECO SW
HTR SW
PWR SW
DGUS SW
TO D BOARD
CN502
B-SS9116<U/C>-BD3-EPS05
CN801
1W+5V
STBY+5V
LED0
LED1
INPUT SW
KEY DET
ENV DRI
TO N BOARD
CN007
LED DRV
Q801, 802
LED DRV
Q803, 804
R
G
D801
POWER
S800
INPUT2
INPUT1
S801, S802, S803
RESET
ASC
V–
S804, S805, S806
V+
MENU
H–
S807
H+
FUNCTION KEY
TH801
IC630
REG
REG SW
Q630
VCC SW
Q610
PH620
PROTECT
Q670
T630
SRT
IC653
1W+5V REG
IC652
STBY+5V REG
IC651
HEATER REG
VADJ
PH630
IC680
HEATER SW
Q671

5-2. FRAME SCHEMATIC DIAGRAM



5-3. CIRCUIT BOARDS LOCATION



5-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted. (pF: μμF) Capacitors without voltage indication are all 50 V.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4 W (CHIP : 1/10 W)

- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground.
- : earth-chassis.
- The components identified by ⋈ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. (See page 3-1)
- When replacing the part in below table, be sure to perform the related adjustment.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- All voltages are in V.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- ∗ : Can not be measured.
- Circled numbers are waveform references.
- : B + bus.
- : B – bus.

- Divided circuit diagram

  One sheet of N board circuit diagram is divided into three sheets, each having the code N-ⓐ to N-ⓒ. For example, the destination (ab1) on the code N-ⓐ sheet is connected to (ab1) on the N-ⓑ sheet.

  a b 1
  Ref. No.
  Circuit diagram division code

	Part Replaced (⋈)
HV ADJ	RV901

	Part Replaced (◪)
HV Regulator Circuit Check	D Board C920, IC901, R923 R924, R929, R945, RV901, T902 (FBT) • Mounted D Board
HV Protector Circuit Check	D Board C922, C925, C926, D912, D914, D915, D921, Q907, Q908, R921, R922, R932, R937, R939, T902 (FBT) • Mounted D Board
Beam Current Protector Circuit Check	D Board C910, C921, C933, D901, D902, D913, IC503, IC901, R901, R920, R928, R930, R931, R940, R941, T902 (FBT) • Mounted D Board G Board IC652 • Mounted G Board N Board IC001, R031, R032 • Mounted N Board

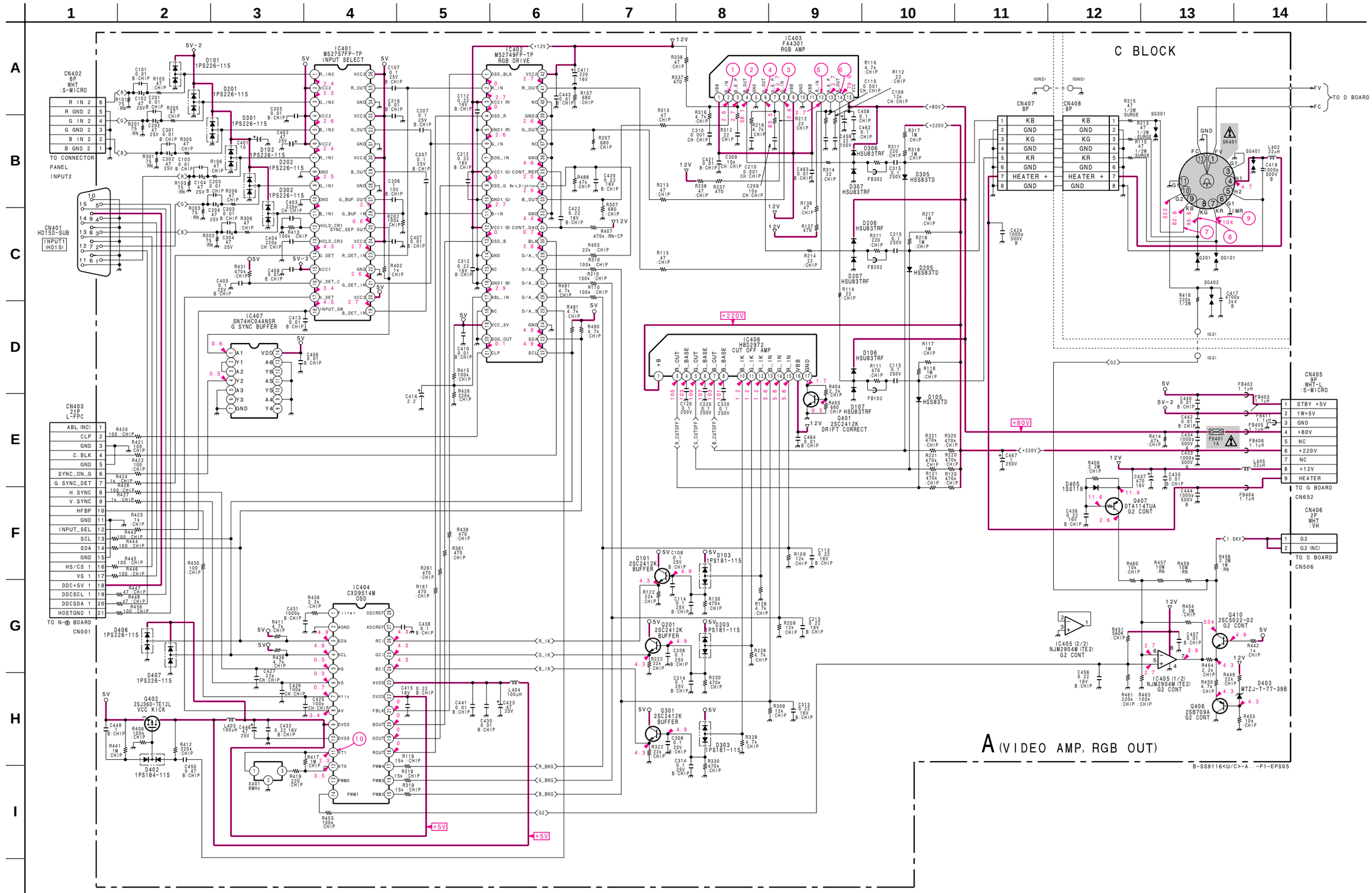
Terminal name of semiconductors in silk screen printed circuit (∗)

	Device	Printed symbol	Terminal name	Circuit
①	Transistor	T	Collector / Base T Emitter	
②	Transistor	—	Collector / Base Emitter	
③	Diode		Cathode — Anode	
④	Diode	T	Cathode / Anode T (NC)	
⑤	Diode	—	Cathode / Anode (NC)	
⑥	Diode	T	Common / Anode T Cathode	
⑦	Diode	—	Common / Anode Cathode	
⑧	Diode	T	Common / Anode T Anode	
⑨	Diode	—	Common / Anode Anode	
⑩	Diode	T	Common / Cathode T Cathode	
⑪	Diode	—	Common / Cathode Cathode	
⑫	Diode	|	Anode Anode Cathode | Cathode Anode Anode	
⑬	Transistor (FET)	|	Drain | Source Gate	
⑭	Transistor (FET)	⊢	Drain ⊢ Source Gate	
⑮	Transistor (FET)	|	□ Source □ Drain □ Gate	
⑯	Transistor	|	□ Emitter □ Collector □ Base	
—	Discrete semiconductot			

(Chip semiconductors that are not actually used are included.)

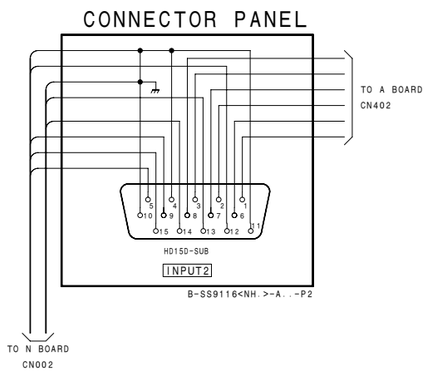
Ver.1.6

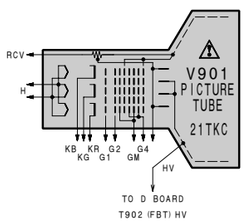
(1) Schematic Diagram of A Board



Schematic diagram

A board ➡

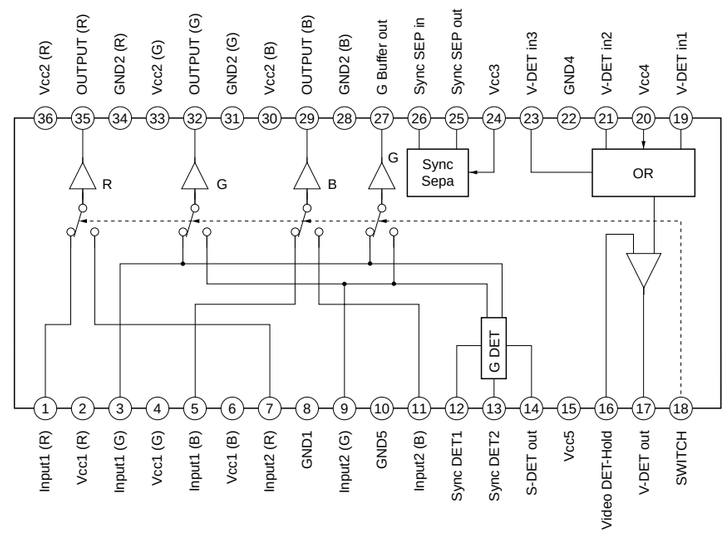




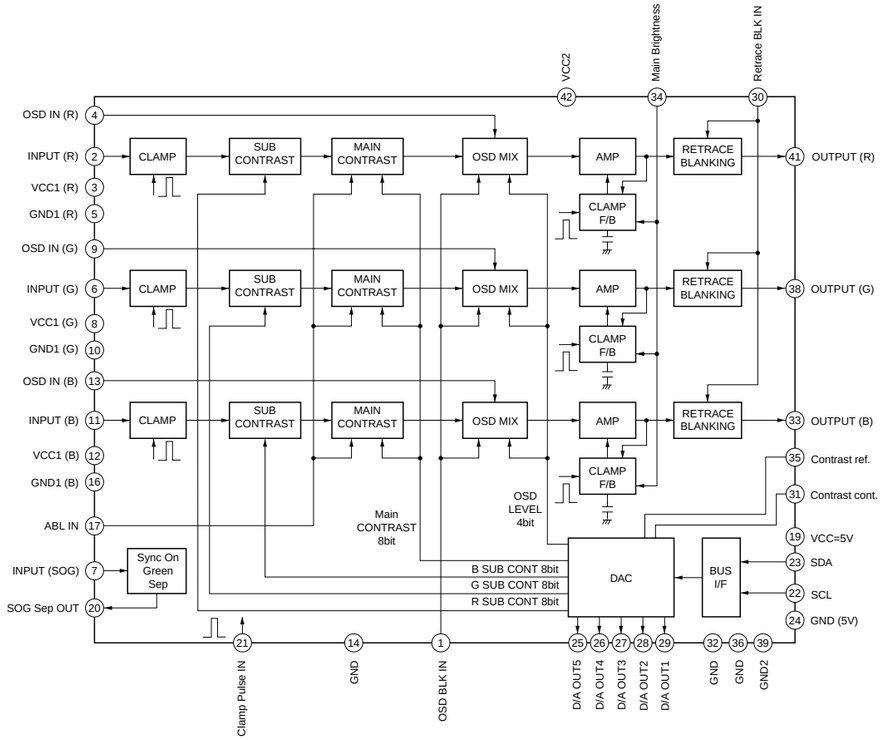
• A BOARD WAVEFORMS

① 4.7 Vp-p (H)	② 66.0 Vp-p (H)	③ 4.8 Vp-p (H)
④ 64.0 Vp-p (H)	⑤ 4.6 Vp-p (H)	⑥ 64.0 Vp-p (H)
⑦ 65.0 Vp-p (H)	⑧ 64.0 Vp-p (H)	⑨ 64.0 Vp-p (H)
⑩ 2.2 Vp-p (8MHz)		

• A BOARD IC401 M52757FP

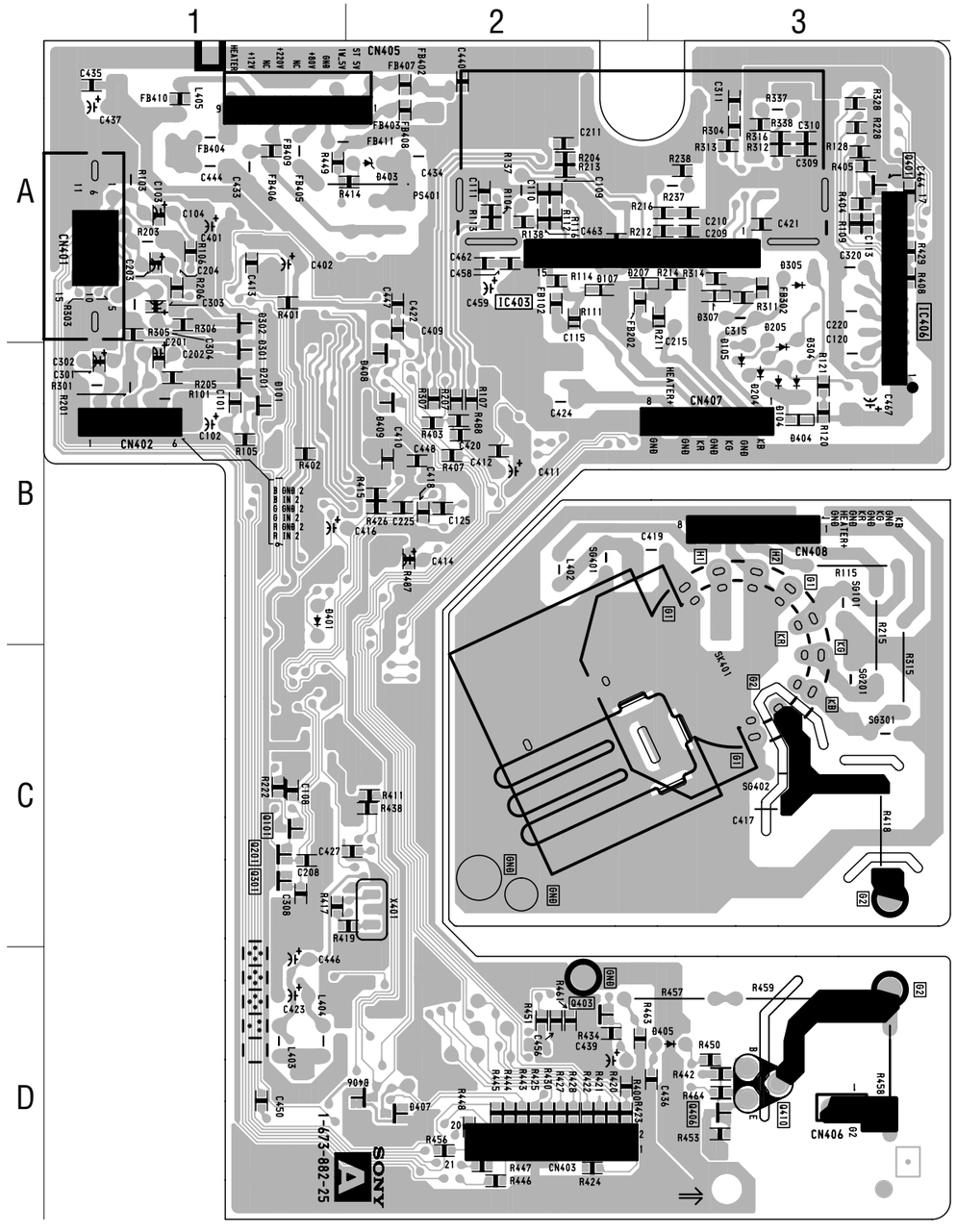


• A BOARD IC402 M52749FP



A [VIDEO AMP RGB OUT]

— A BOARD (Conductor Side) —



• A BOARD SEMICONDUCTOR LOCATION

IC

	(Conductor Side)	(Component Side)
IC401		B-3
IC402		B-2
IC403	A-2	A-2
IC404		C-3
IC405		D-2
IC406	A-3	A-1
IC407		D-2

TRANSISTOR

	(Conductor Side)	(Component Side)	✱
Q101	C-1		①
Q201	C-1		①
Q301	C-1		①
Q401	A-3		①
Q402		D-3	⑮
Q406	D-3		①
Q407		D-2	②
Q410	D-3	D-1	–

DIODE

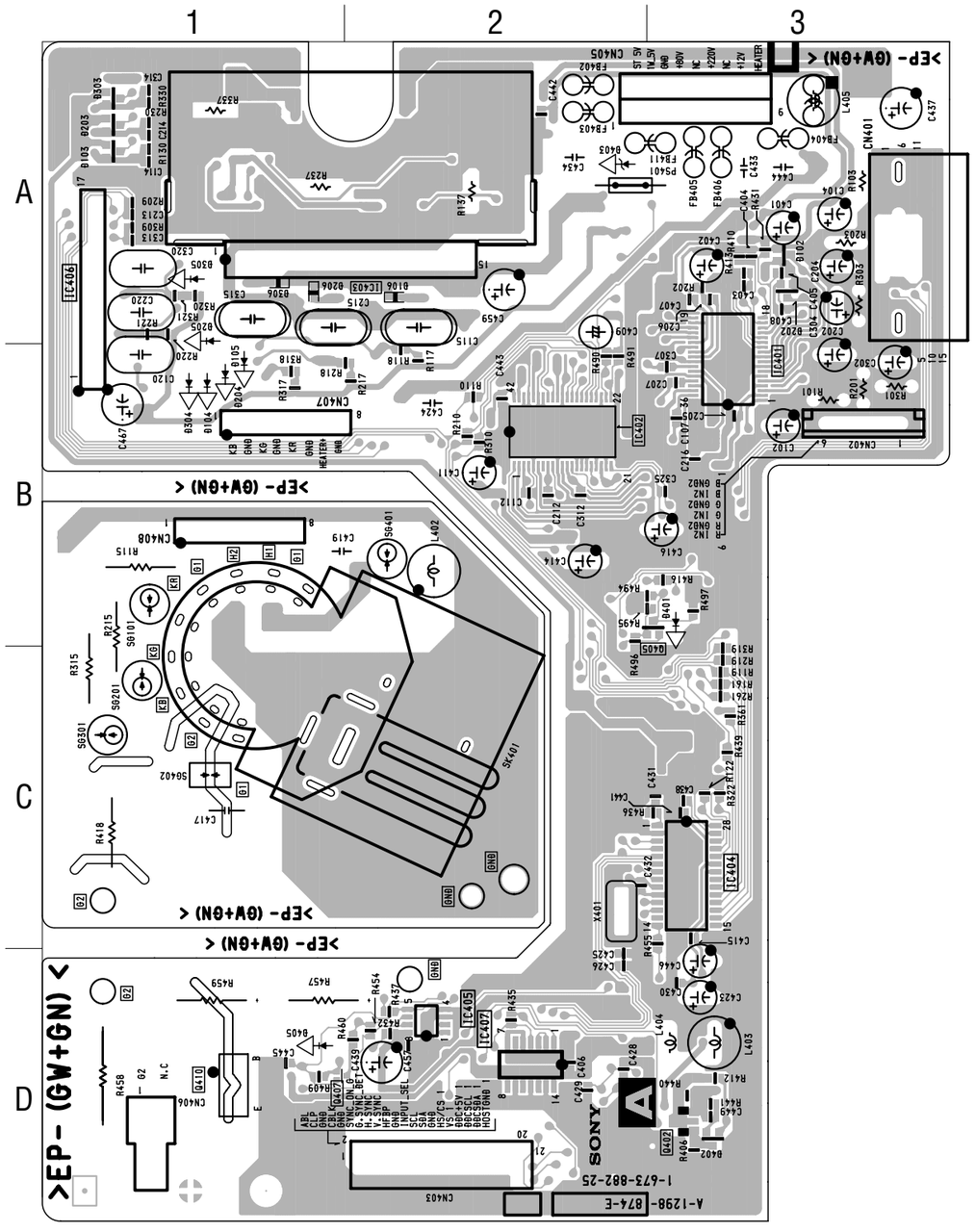
	(Conductor Side)	(Component Side)	✱
D101	B-1		⑥
D102		A-3	⑦
D103		A-1	⑪
D105	B-3	B-1	–
D106		A-2	③
D107	A-2		③
D201	B-1		⑥
D202		A-3	⑦
D203		A-1	⑪
D205	B-3	A-1	–
D206		A-1	③
D207	A-2		③
D301	B-1		⑥
D302	A-1		⑥
D303		A-1	⑪
D305	A-3	A-1	–
D306		A-1	③
D307	A-3		③
D402		D-3	⑨
D403	A-2	A-2	–
D405	D-3	D-1	–
D406	D-2		⑥
D407	D-2		⑥

CRYSTAL

	(Conductor Side)	(Component Side)
X401	C-2	C-2

✱: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-10)

— A BOARD (Component Side) —

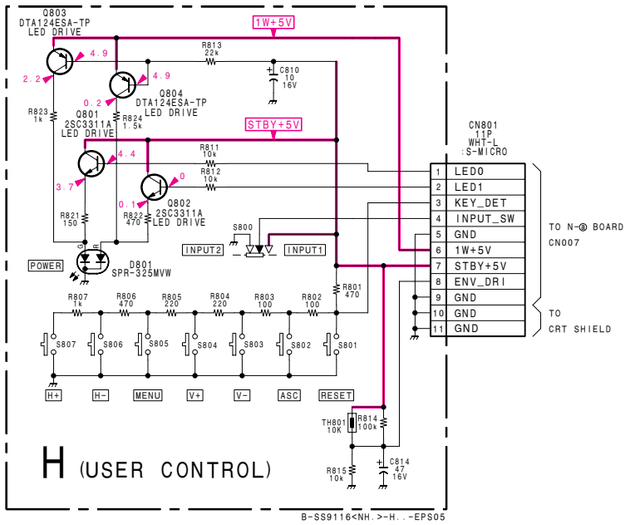


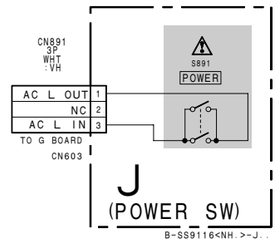
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

Schematic diagram
← A board

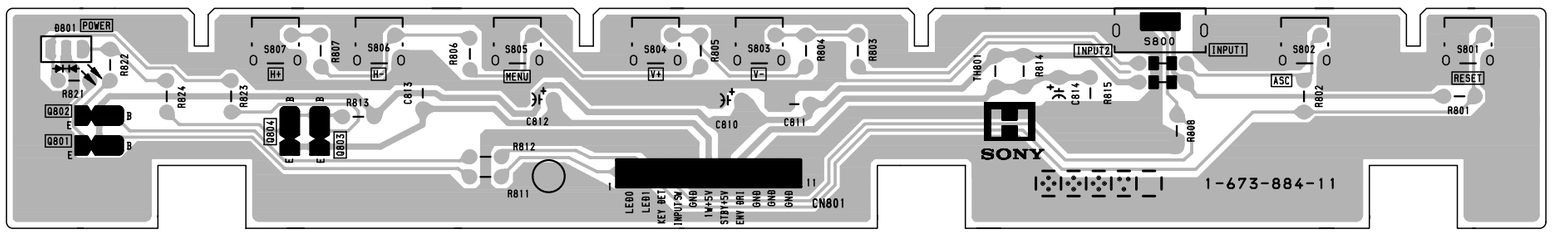
(2) Schematic Diagrams of H, J Boards

H [USER CONTROL] J [POWER SW]

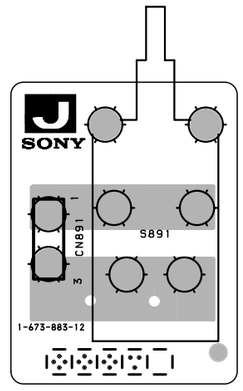




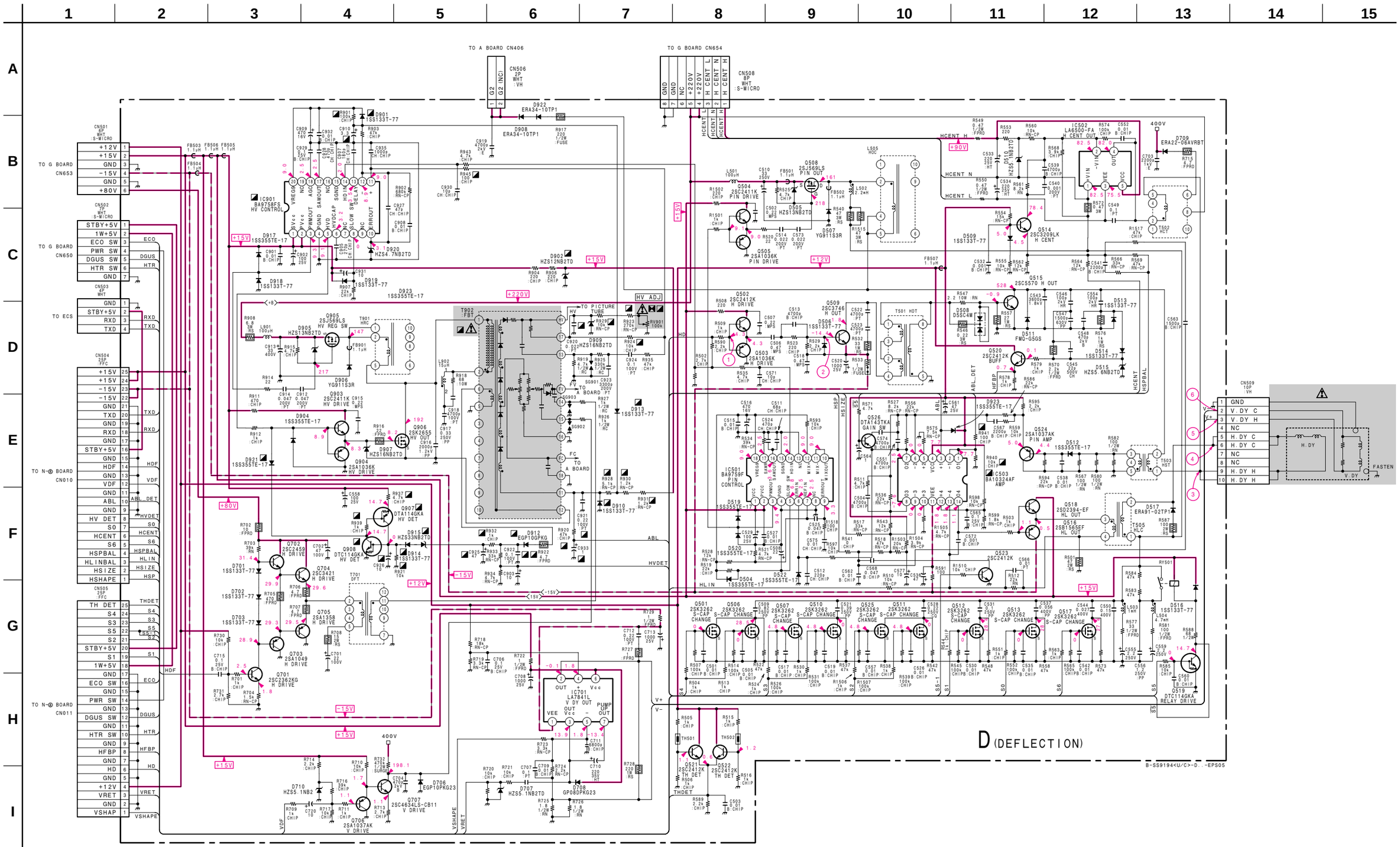
— H BOARD —



— J BOARD —



(3) Schematic Diagram of D Board



Schematic diagrams
← H J **boards**

Schematic diagram
D **board** →

• D BOARD WAVEFORMS

① 8.8 Vp-p (H)	② 1.9 Vp-p (H)	③ 568 Vp-p (H)
④ 50.6 Vp-p (H)	⑤ 54.5 Vp-p (H)	⑥ 2.1 Vp-p (H)

• D BOARD SEMICONDUCTOR LOCATION

IC

		*
IC501	C-4	
IC502	A-1	
IC503	C-4	
IC701	A-5	
IC901	C-1	

TRANSISTOR

		*
Q501	B-5	–
Q502	A-4	①
Q503	A-4	①
Q504	C-4	①
Q505	D-4	①
Q506	B-5	–
Q507	C-5	–
Q508	A-2	–
Q509	A-4	–
Q510	C-5	–
Q511	C-5	–
Q512	C-5	–
Q513	C-5	–
Q514	B-2	–
Q515	A-3	–
Q516	B-4	–
Q517	D-5	–
Q518	B-4	–
Q519	D-4	①
Q520	B-5	①
Q521	B-5	①
Q522	C-5	①
Q524	B-3	①
Q525	C-5	–
Q526	C-4	①
Q701	D-4	–
Q702	D-3	–
Q703	D-4	–
Q704	D-3	–
Q705	D-4	–
Q706	D-3	①
Q707	D-3	–
Q903	B-3	①
Q904	C-3	①
Q905	C-3	–
Q906	C-3	–
Q907	B-2	①
Q908	B-2	①

DIODE

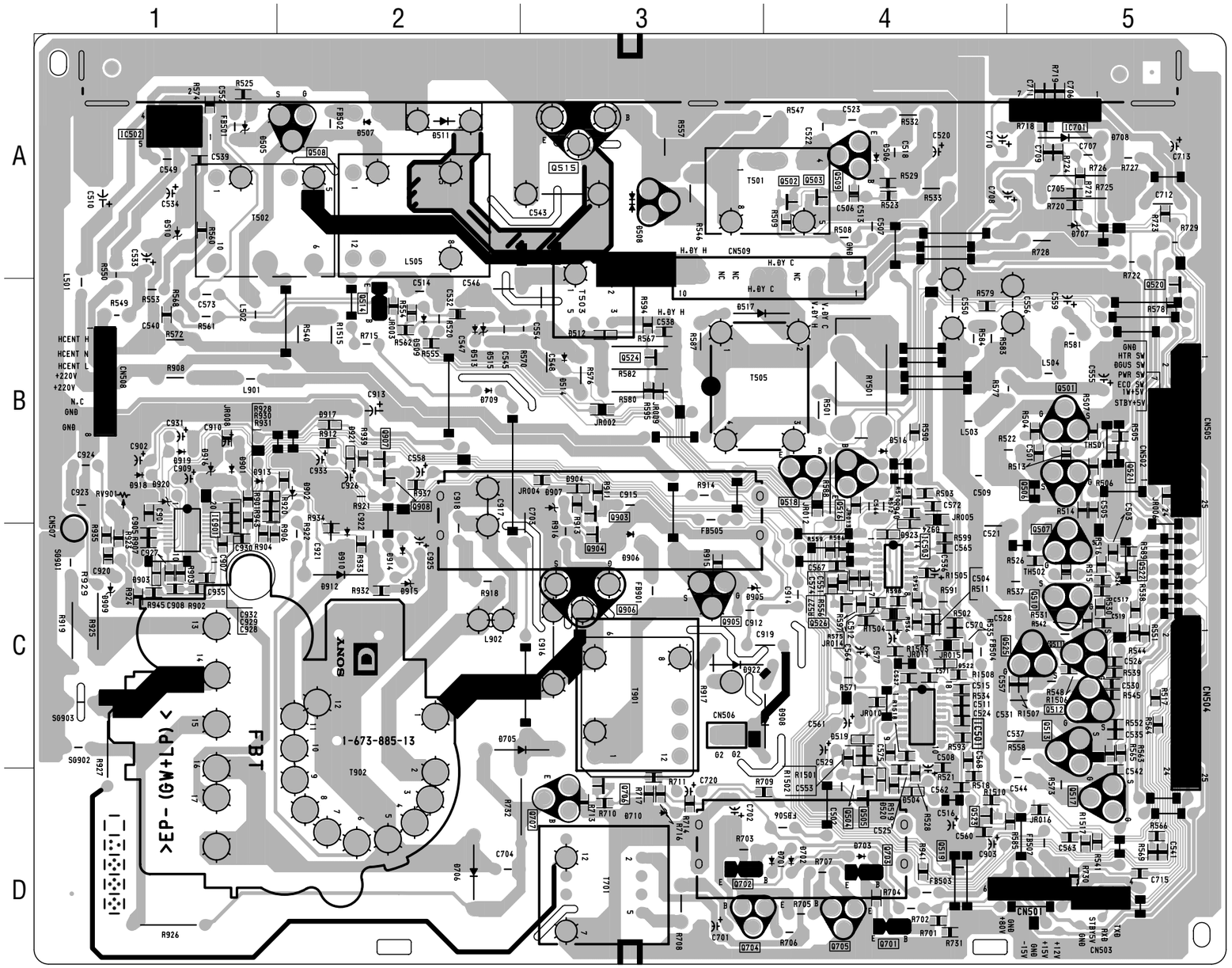
		*
D504	D-4	③
D505	A-1	–
D506	A-4	–
D507	A-2	–
D508	A-3	–
D509	B-2	–
D510	A-1	–
D511	A-2	–
D512	B-3	③
D513	B-2	–
D514	B-3	–
D515	B-2	–
D516	B-4	–
D517	B-3	–
D519	C-4	③
D520	D-4	③
D522	C-4	③
D701	D-4	–
D702	D-4	–
D703	D-4	–
D706	D-2	–
D707	A-5	–
D708	A-5	–
D709	B-2	–
D710	D-3	–
D901	B-1	–
D902	B-2	–
D904	B-3	③
D905	C-3	–
D906	C-3	–
D907	B-3	–
D908	C-3	–
D909	C-1	–
D910	C-2	–
D912	C-2	–
D913	B-1	–
D914	C-2	–
D915	C-2	–
D917	B-2	③
D918	B-1	–
D919	B-1	–
D920	B-1	–
D921	B-2	③
D922	C-3	–
D923	C-4	③

VARIABLE RESISTOR

RV901	B-1

***: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-10)**

— D BOARD —

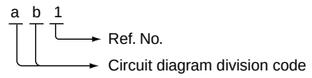


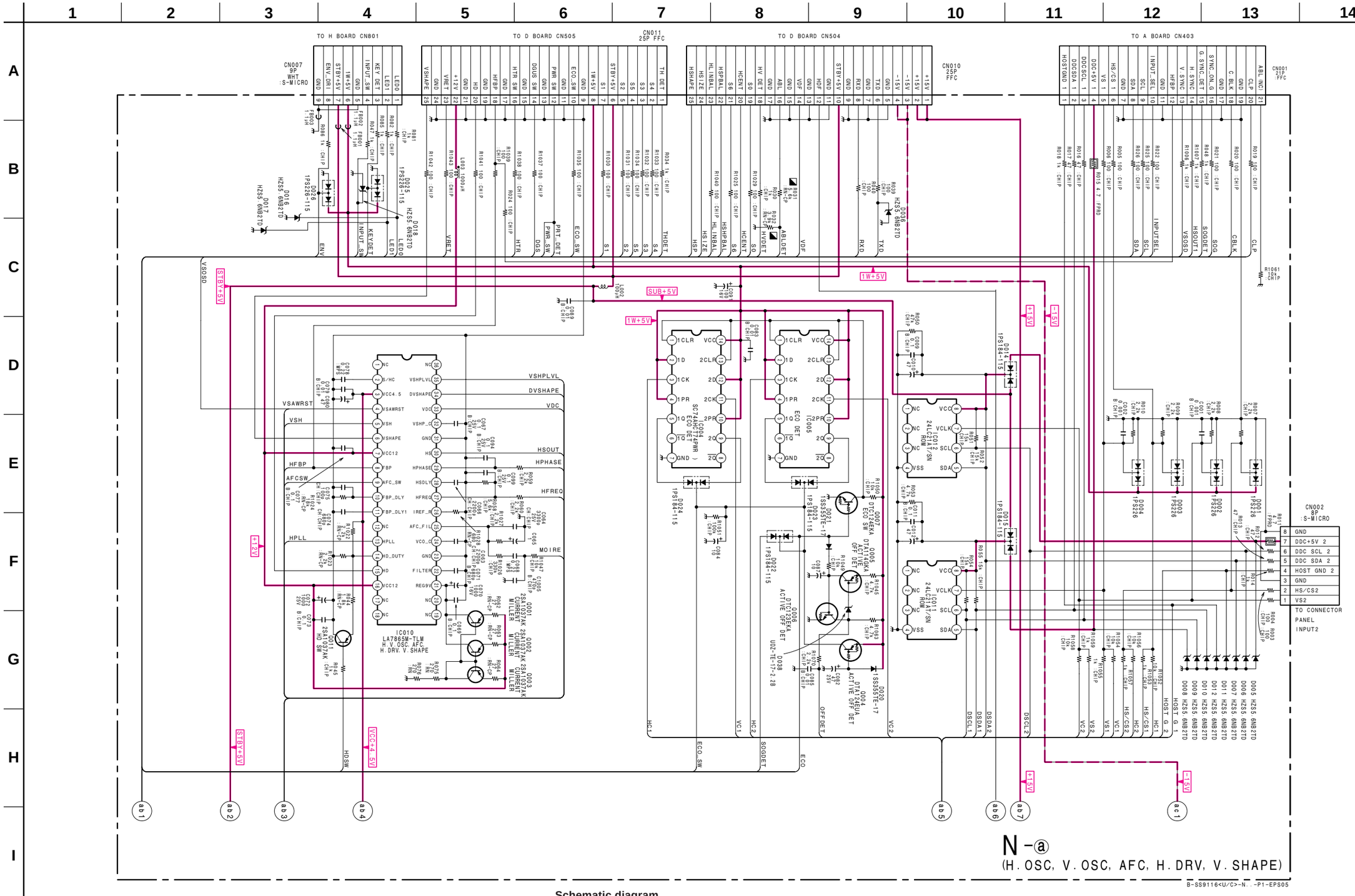
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

(4) Schematic Diagrams of N (ⓐ, ⓑ, ⓒ) Board

- Divided circuit diagram

  One sheet of N board circuit diagram is divided into three sheets, each having the code N-ⓐ to N-ⓒ. For example, the destination ab1 on the code N-ⓐ sheet is connected to ab1 on the N-ⓑ sheet.





Schematic diagram

N-ⓐ board ➡

N-ⓑ

(μ-COM, GEO MAGNETIC SENSOR)

IC001
CXD8744Q
CPU/DSP

IC006
TL082CPS-E20
ABL DET AMP

IC003
M24LC16BMN6T
EEPROM

IC002
MM1026BFB
WDT

Q008
DTC114GKAT146
SW

Q010
2SA1037AK
INV.

Q012
DTC124EKA
INV.

D018
HZS10NB2TD

D028
ISS355TE-17

D027
ISS355TE-17

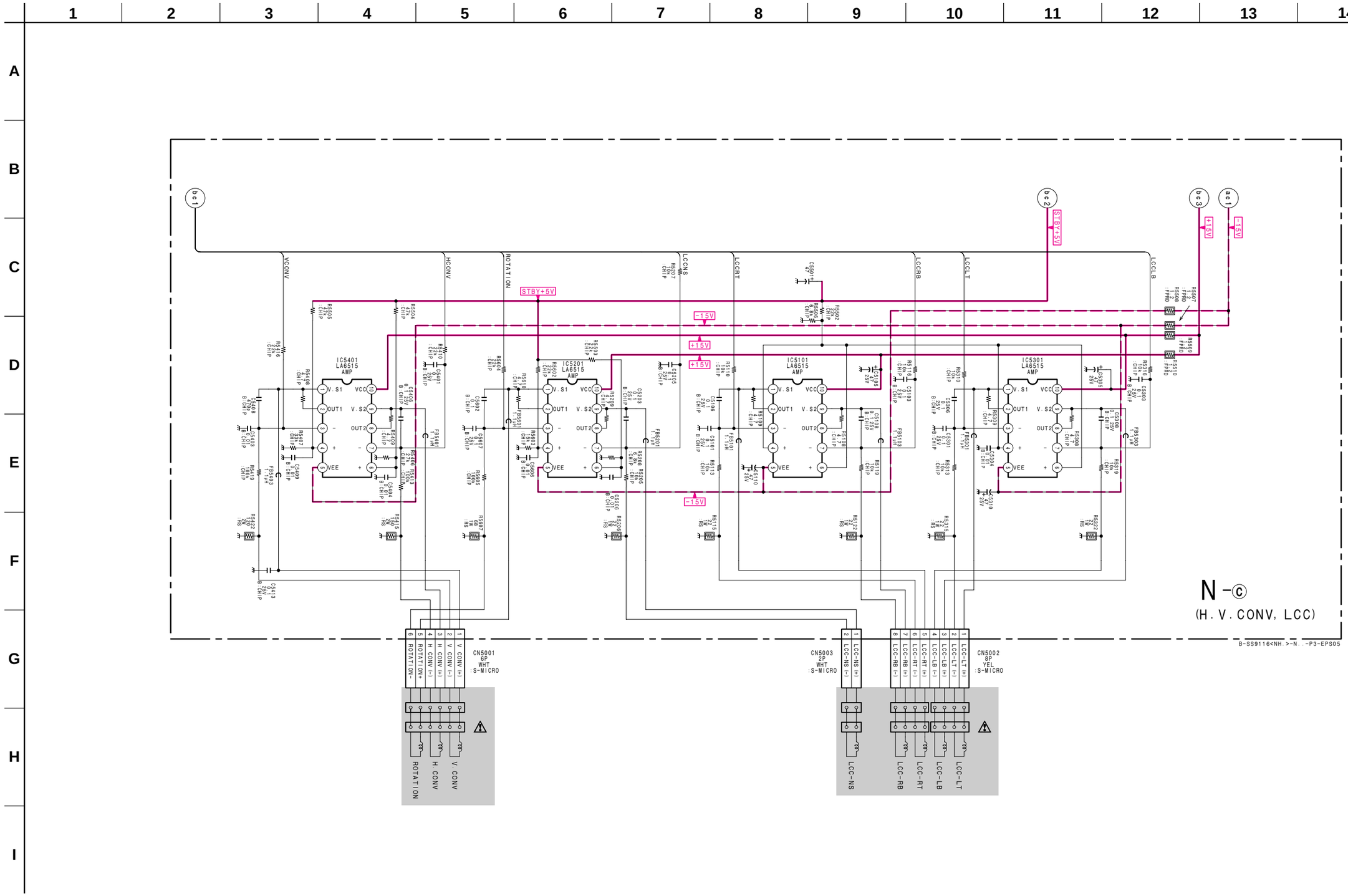
GS5001
GEOMAGNETIC SENSOR

STBY+5V

+15V

VCC+4.5V

MOIRE
MOIREPLS
MOIRECONT
VDC
VSHPLVL
DVSHAPE
HPHASE
HFREQ
HFBP
SOG
VS2
HS/CS2
VS1
HS/CS1
HSOUT
AFCSW
HPLL
VSH
VSAMRST
HSHPBAL
VDF
VCONV
HSP
HSIZE
HCENT
ROTATION
HLINBAL
HCONV
LCCNS
LCCLT
LCCRT
LCCLB
LCCRB
LED0
LED1
HDSW
EOO
INPUT_SW
PRT_DET
OFFDET
KEYDET
ENV
TEMP
VIDEO
INPUTSEL
EEPMC
S6
S5
S3
S2
S1
S0
CLP
CBLK
DSDA2
DSCL2
DSDA1
DSCL1
TXD
RXD
SDA
SCL



Schematic diagram

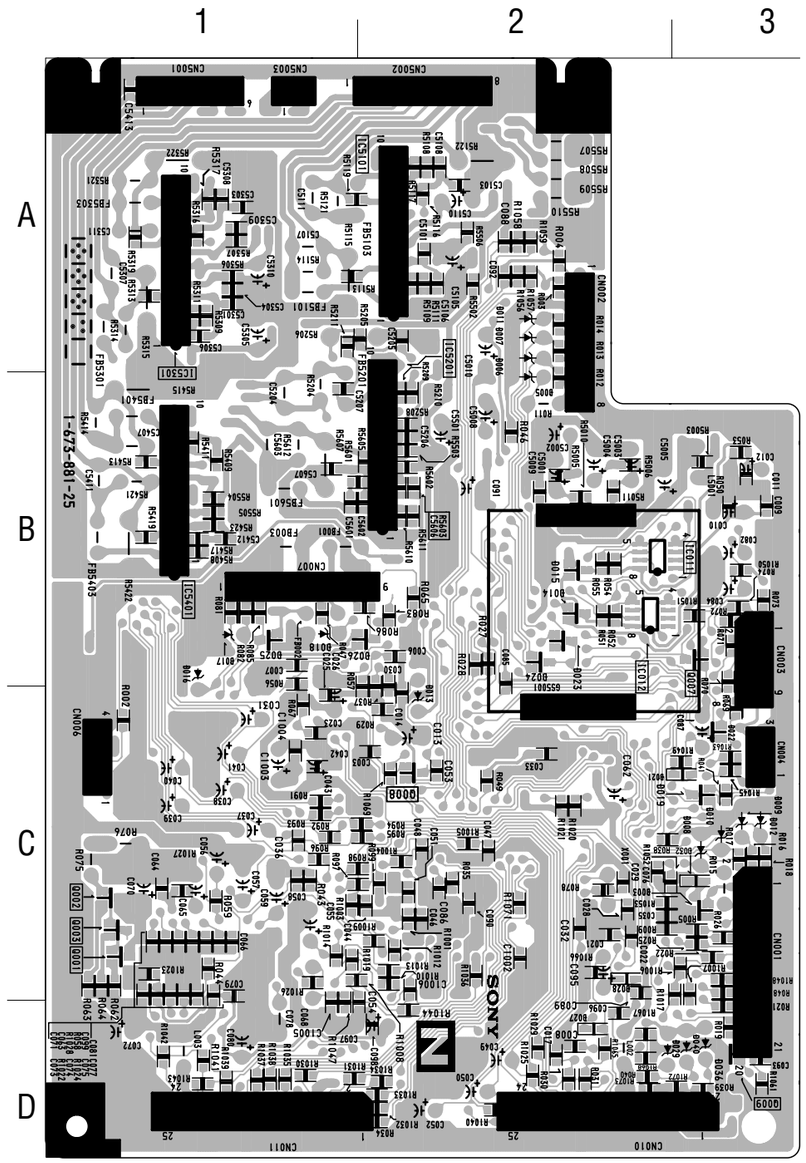
← N-ⓑ board

Schematic diagram

N-ⓒ board →

N [µ-COM, V.CONV, H.CONV, LCC, GEO MAGNETIC SENSOR]

— N BOARD (Conductor Side) —



• N BOARD SEMICONDUCTOR LOCATION

IC	(Conductor Side)	(Component Side)
IC001		C-2
IC002		C-2
IC003		C-2
IC004		B-2
IC005		B-2
IC006		D-1
IC010		C-2
IC011	B-2	
IC012	B-2	
IC5101	A-2	A-2
IC5201	B-2	B-2
IC5301	A-1	A-2
IC5401	B-1	B-2

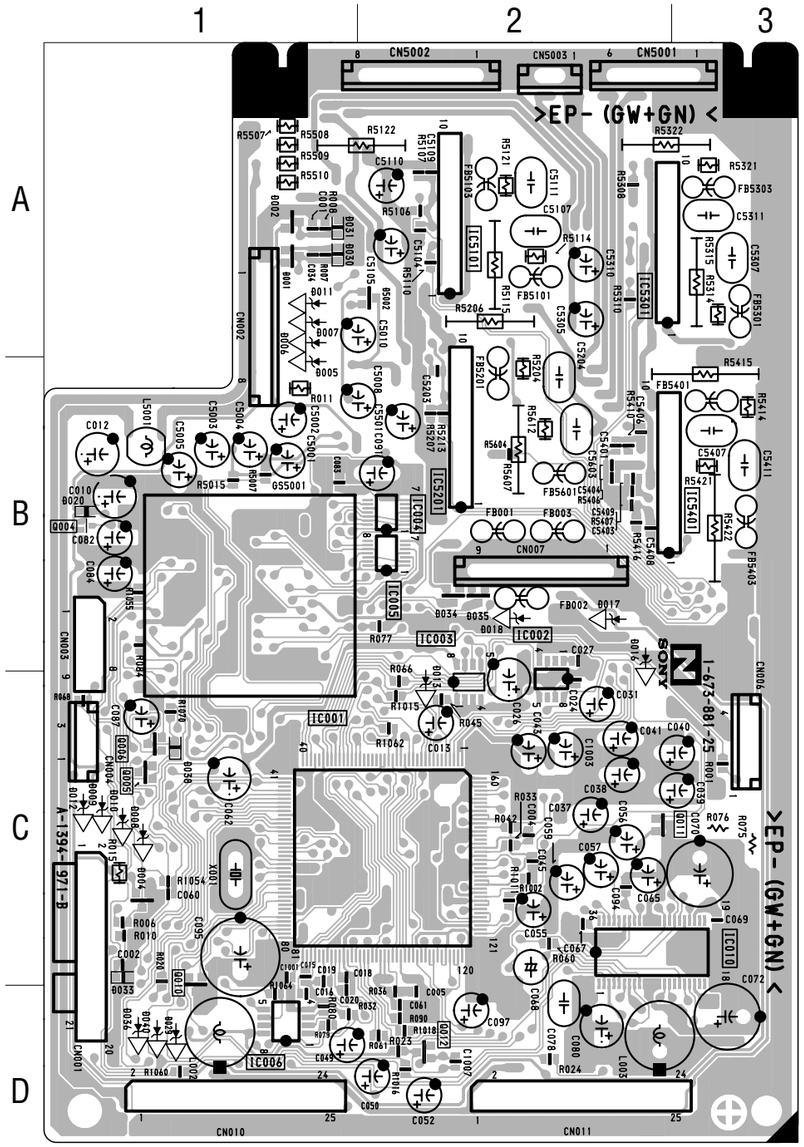
TRANSISTOR	(Conductor Side)	(Component Side)	*
Q001	C-1		①
Q002	C-1		①
Q003	C-1		①
Q004		B-1	②
Q005		C-1	②
Q006		C-1	②
Q007	B-3		①
Q008	C-2		①
Q010		C-1	①
Q011		C-2	②
Q012		D-2	②

DIODE	(Conductor Side)	(Component Side)	*
D001		A-1	⑦
D002		A-1	⑦
D003	C-3		⑥
D004		C-1	⑦
D005	B-2	B-1	–
D006	A-2	A-1	–
D007	A-2	A-1	–
D008	C-3	C-1	–
D009	C-3	C-1	–
D010	C-3	C-1	–
D011	A-2	A-1	–
D012	C-3	C-1	–
D013	C-2	C-2	–
D014	B-2		⑧
D015	B-2		⑧
D016	B-1	B-2	–
D017	B-1	B-2	–
D018	B-1	B-2	–
D020		B-1	③
D021	C-3		③
D022	C-3		⑧
D023	B-2		⑧
D024	B-2		⑧
D025	B-1		⑥
D026	B-2		⑥
D027	D-2		③
D028	D-2		③
D029	D-3	D-1	–
D036	D-3	D-1	–
D038		C-1	③

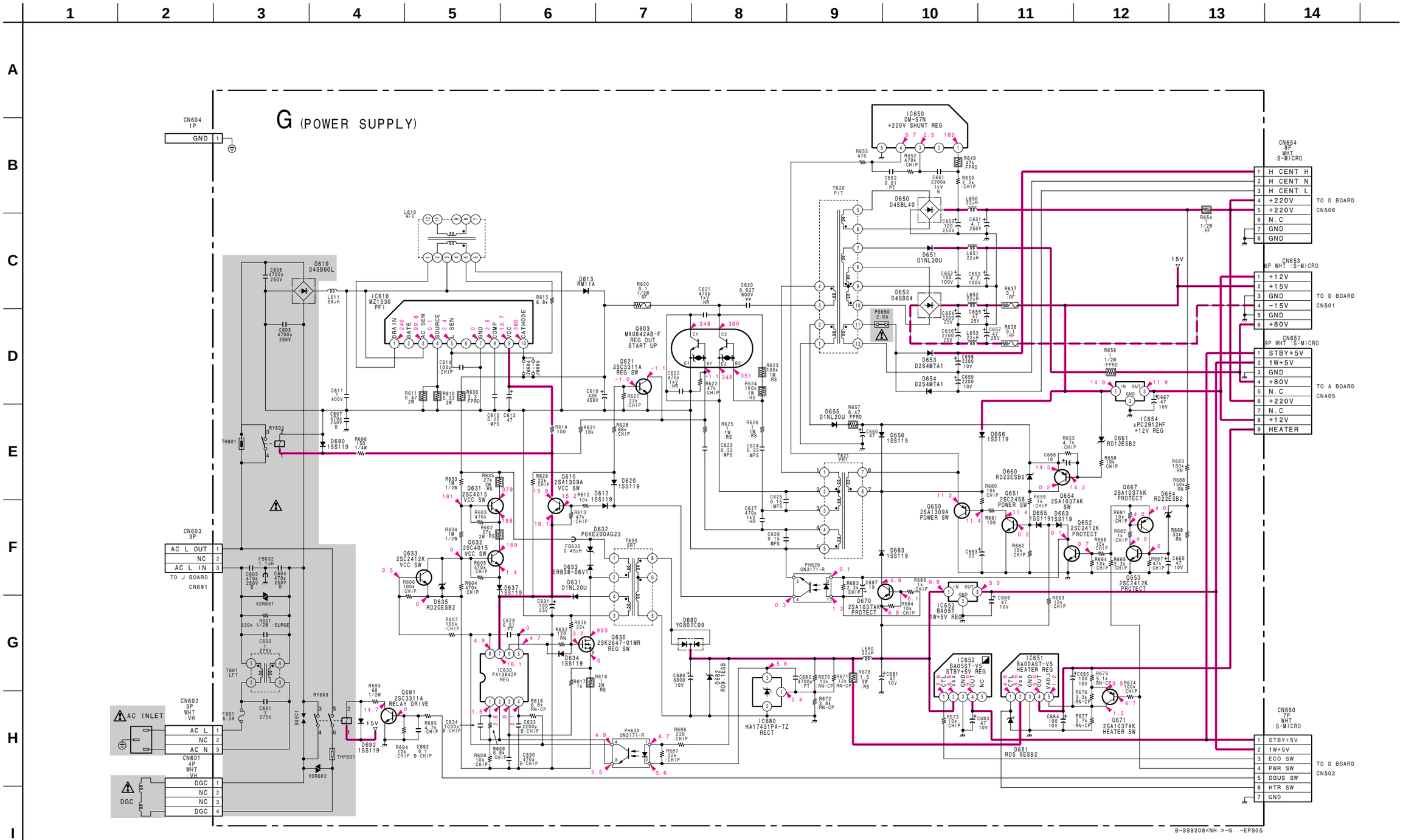
CRYSTAL	(Conductor Side)	(Component Side)
X001	C-2	C-1

∗: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-10)

— N BOARD (Component Side) —



(5) Schematic Diagram of G Board

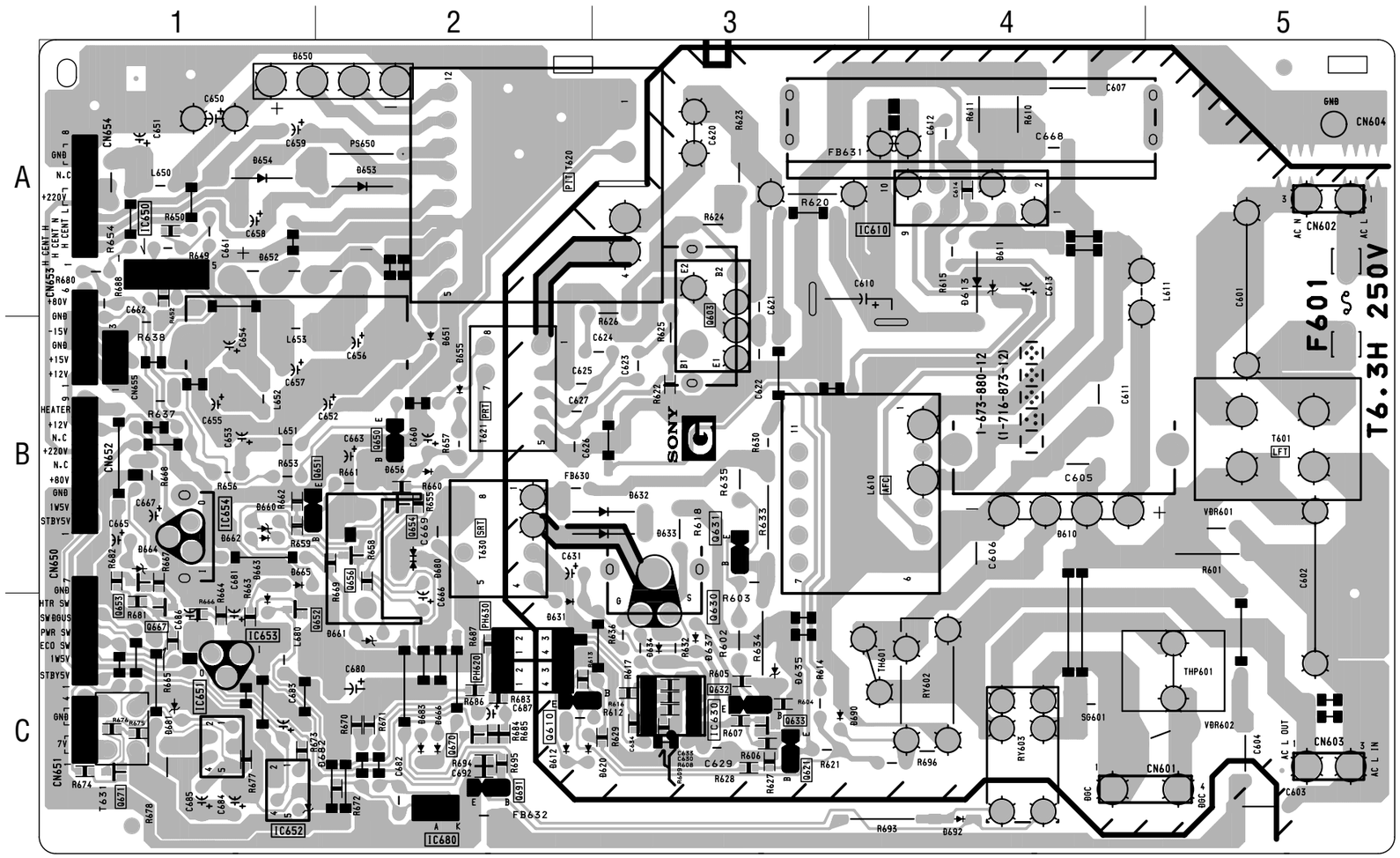


Schematic diagram

G board ➡

G [POWER SUPPLY]

— G BOARD —



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

- **G BOARD SEMICONDUCTOR LOCATION**

IC	
IC610	A-4
IC630	C-3
IC650	A-1
IC651	C-1
IC652	C-1
IC653	C-1
IC654	B-1
IC680	C-2

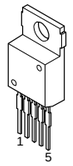
TRANSISTOR		*
Q603	A-3	-
Q610	C-2	-
Q621	C-3	-
Q630	C-3	-
Q631	B-3	-
Q632	C-3	-
Q633	C-3	①
Q650	B-2	-
Q651	B-1	-
Q652	C-1	①
Q653	B-1	①
Q654	B-2	①
Q667	C-1	①
Q670	C-2	①
Q671	C-1	①
Q691	C-2	-

DIODE	
D610	B-4
D612	C-2
D613	A-4
D620	C-2
D631	C-2
D632	B-3
D633	B-3
D634	C-3
D635	C-3
D637	C-3
D650	A-2
D651	B-2
D652	A-1
D653	A-2
D654	A-1
D655	B-2
D656	B-2
D660	B-1
D661	C-2
D663	C-1
D664	B-1
D665	B-1
D666	C-2
D680	B-2
D681	C-1
D682	C-1
D683	C-2
D690	C-3
D692	C-4

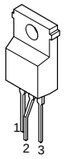
∗: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-10)

5-5. SEMICONDUCTORS

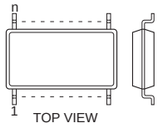
BA00AST-V5
BA05ST-V5
LA6500-FA



BA05T



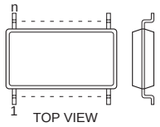
BA10324AF-E2
SN74AHCT74PWR
SN74HC04ANS
SN74HC04ANSR
XRA10324AF



TOP VIEW

14pin SOP

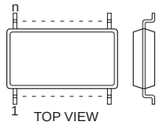
NJM082M
NJM2904M
NJM2904M(TE2)
TL082CPS-E20
24LC21AT/SN



TOP VIEW

8pin SOP

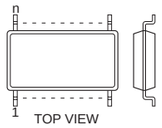
BA9758FS-E2



TOP VIEW

20pin SOP

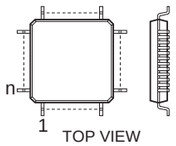
BA9759F-E2



TOP VIEW

18pin SOP

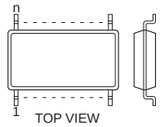
CXD8744Q



TOP VIEW

160pin QFP

CXD9514M

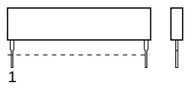


TOP VIEW

28pin SOP

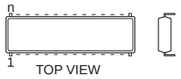
DM-57N

MARKING SIDE VIEW



5pin SIP

FA13842P
M24C16-MN6T
MM1170BFB

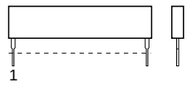


TOP VIEW

8pin DIP

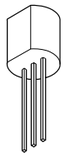
FA4301

MARKING SIDE VIEW

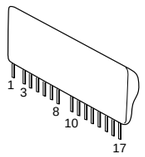


15pin SIP

HA17431PA
HA17431PA-TZ

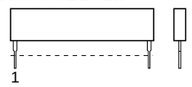


H8D2972



LA6515

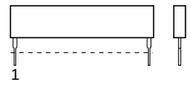
MARKING SIDE VIEW



10pin SIP

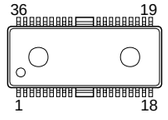
LA7841L

MARKING SIDE VIEW

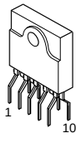


7pin SIP

LA7865M-TLM



MZ1530



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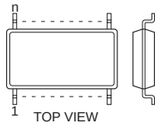
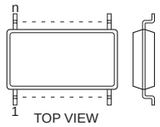


TOP VIEW

42pin SOP

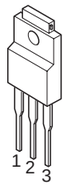
M52757FP-TP



TOP VIEW

36pin SOP

µPC2912HF (12)



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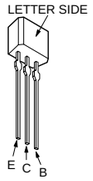
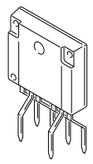
DTA114TUA-T106
DTA124EUA-T106
DTA143TKA-T146
DTC114GKA
DTC114GKAT146
DTC123EKA-T146
DTC124EK
DTC124EKA-T146
2SA1036K-Q
2SA1036K-T-146-Q
2SA1037AK-T146-QR
2SA1037AK-T146-R
2SA1162-G
2SB709A-QRS-TX
2SC1623-L5L6
2SC2411K-CQ
2SC2411K-T-146-CQ
2SC2412K-T-146-QR

DTA124ESA
DTA124ESA-TP
2SA1175-HFE
2SA1309A-QRSTA
2SC2459-GR-TPE4
2SC2784
2SC2785-HFE
2SC3311A-QRSTA

LETTER SIDE



MX0842AB-F



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2SC2458-YGR
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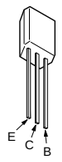

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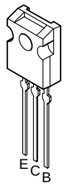

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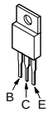
2SC3746
2SC4634LS-CB11
2SC5022-02



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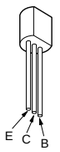

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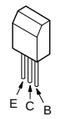
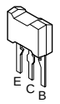


2SC4015TV2



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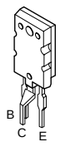

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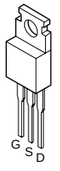

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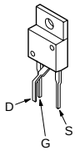
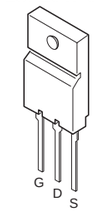
2SK2655-01R-F165
2SK3262-01MR-F119

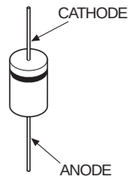


2SJ360-TE12L

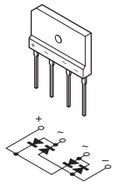
2SK2647-01MR-F91



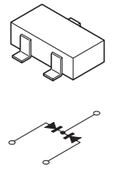
D1NL20U-TR
D2S4MF
D2S4MTA1



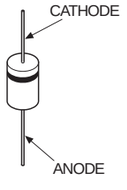
D4SB60L
D4SBL40
D4SBS4
D4SBS4-F



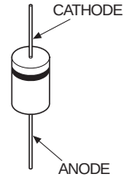
D5SC4M
1PS184-115



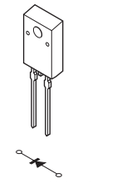
EGP10D
EGP10GPKG23
ERA91-02
ERA91-02TP1



ERA22-06AVRBT
ERA22-08
ERA34-10TP1
ERB38-06V1
GP08D
GP08DPKG23
HSS83TD
P6KE200AG23
RD2.2M-T1B
RGP02-20EL-6394



FMQ-G5GS



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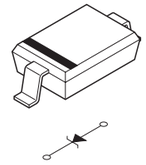
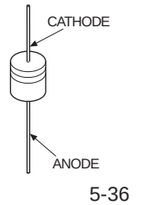
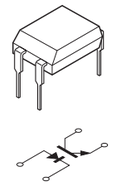


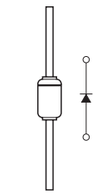
HZS10NB2TD
HZS12NB2TD
HZS13NB2TD
HZS16NB2TD
HZS33NB2
HZS33NB2TD
HZS4.7NB2
HZS4.7NB2TD
HZS5.1NB2TD
HZS5.6NB2TD
MTZJ-T-77-39B
MTZJ-39B
RD10ESB2
RD12ES-B2
RD12ES-T1B2
RD13ES-B2
RD20ES-B2
RD20ES-T1B2
RD22ES-B2
RD22ES-T1B2
RD5.1ESB2
RD5.6ES-T1B2
RD5.6ESB2
UDZ-TE-17-2.2B
1SS119-25
1SS119-25TD
1SS133T-77



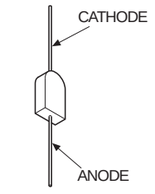
ON3171-R



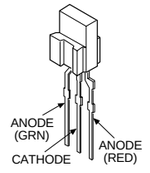
RD9.1ES-L2
RD9.1ES-T1B



RM11A
RM11C



SPR-325MVW



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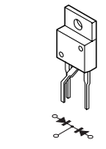

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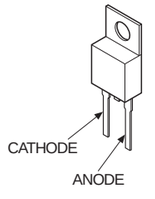

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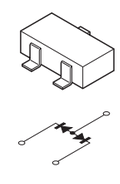

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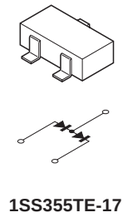

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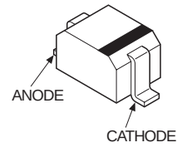

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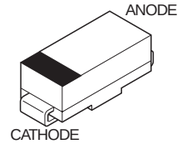


SECTION 6
EXPLODED VIEWS

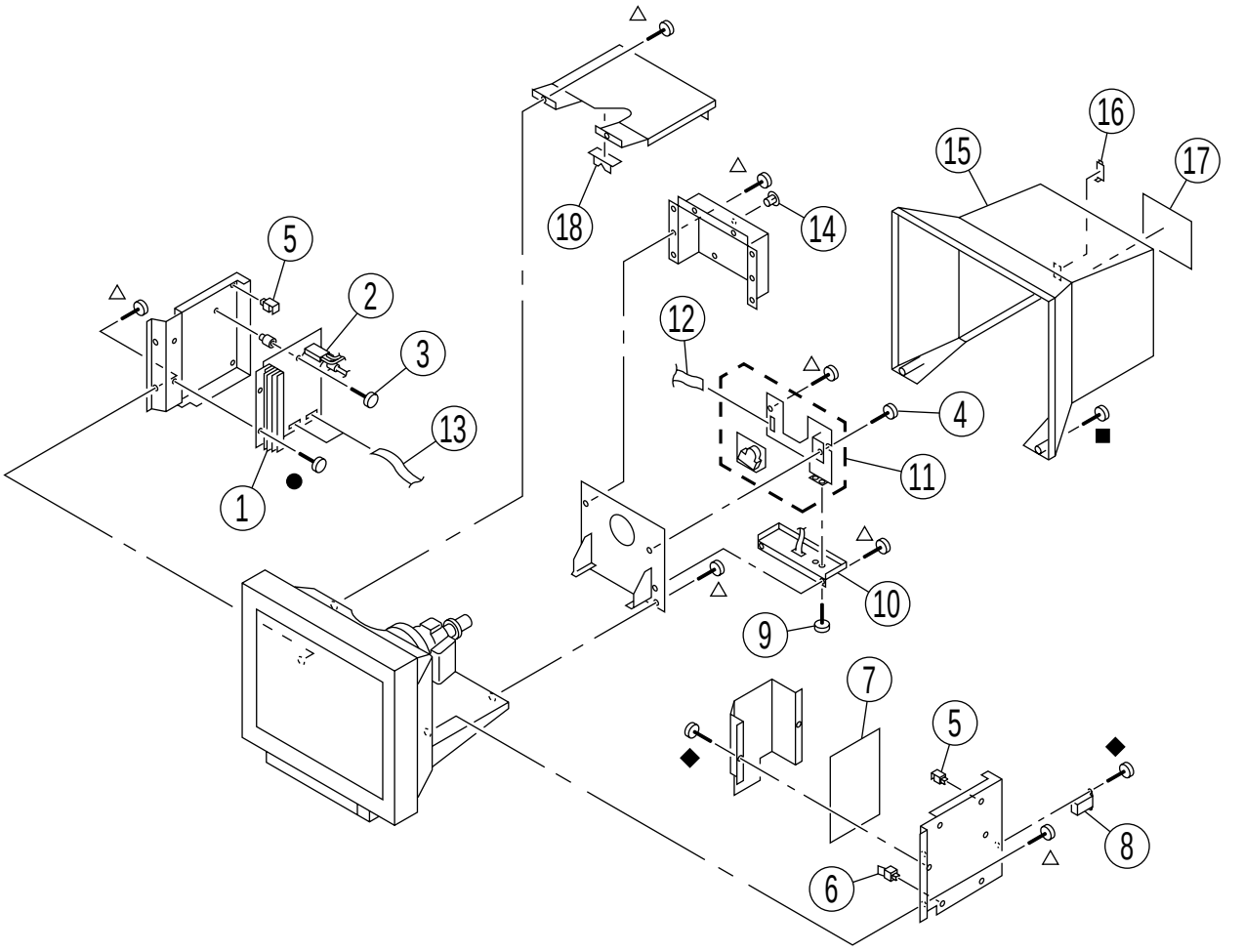
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CHASSIS

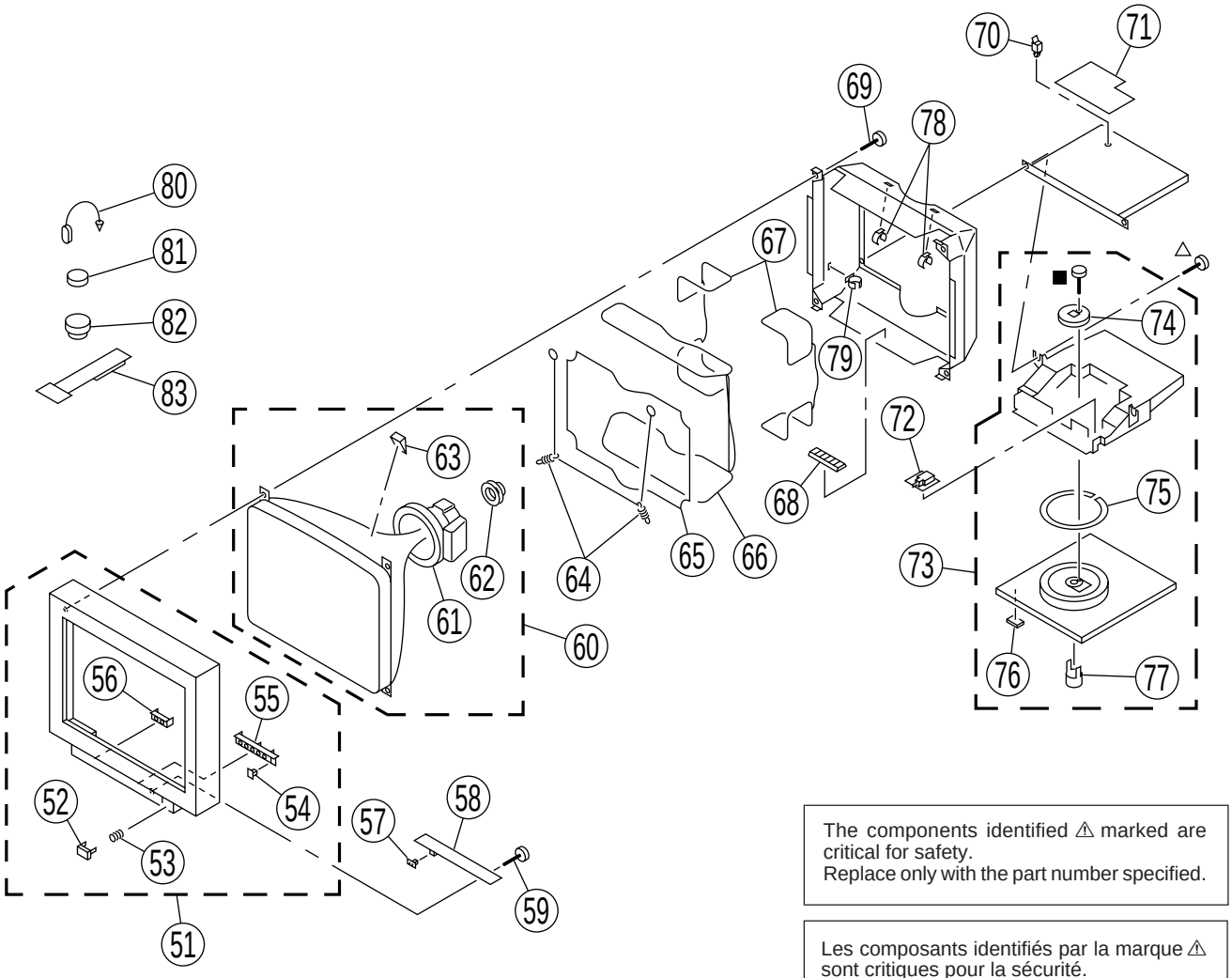
● 7-685-648-79 +BVTP 3X12
■ 7-685-663-71 +BVTP 4X16
◆ 7-685-646-79 +BVTP 3X8
△ 7-685-881-09 +BVTT 4X8



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	* A-1346-827-D	D BOARD, COMPLETE	2
2	⚠ X-4560-175-1	TRANSFORMER ASSY, FLYBACK (NX-4502//J1D4)	
3	4-062-115-01	SCREW +P 3.5X20 TYPE2	
4	4-389-025-11	SCREW (M4) (EXT TOOTH WASHER)	
5	* 3-701-903-11	HOLDER, PRINTED CIRCUIT BOARD	
6	4-070-730-01	HOLDER, PRINTED CIRCUIT BOARD	
7	* A-1316-443-B	G BOARD, COMPLETE	
8	⚠ 1-251-382-31	INLET, AC 3P (WITH NOISE FILTER)	
9	4-070-122-01	SCREW (HD15)	
10	1-694-561-11	TERMINAL BOARD ASSY, I/O	
11	* A-1298-874-E	A BOARD, COMPLETE	
12	1-900-246-08	CONNECTOR ASSY (F)	
13	1-900-250-06	CONNECTOR ASSY (F)	
14	* 4-069-570-01	SPACER, PRINTED CIRCUIT BOARD	
15	4-070-623-21	CABINET	
16	* 4-060-358-82	COVER, ECS	
17	4-073-801-01	LABEL, INFORMATION [NH]	
17	4-073-801-11	LABEL, INFORMATION [SH]	
18	* 4-063-711-01	SUPPORT, HV CABLE	

6-2. PICTURE TUBE

■ 7-685-663-71 +BVTP 4X16
△ 7-685-881-09 +BVTT 4X8

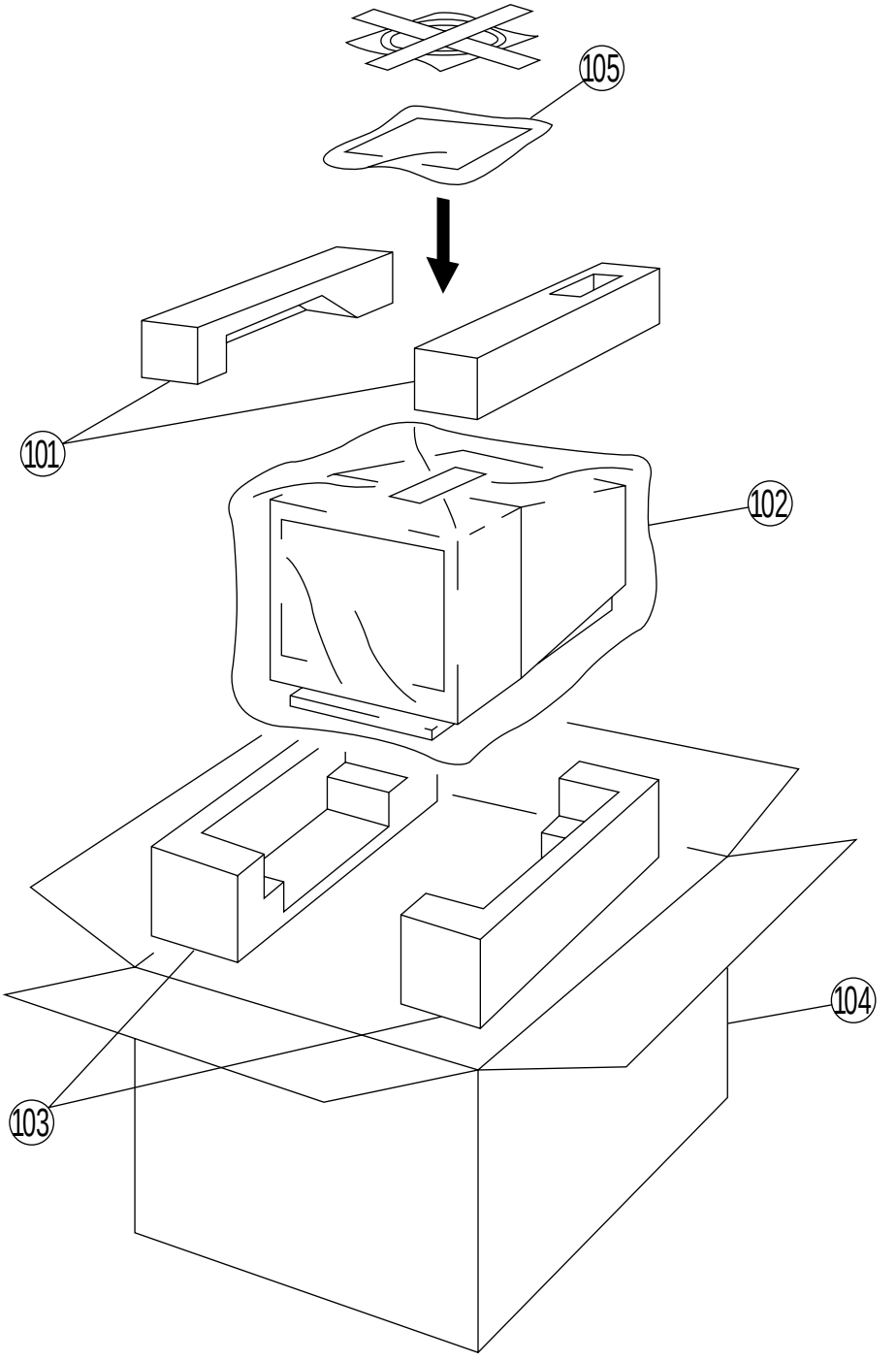


The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4037-387-1	BEZEL ASSY	52-56
52	4-070-736-11	BUTTON, POWER	
53	4-042-593-01	SPRING, COMPRESSION	
54	4-070-737-01	GUIDE, LIGHT	
55	4-070-742-11	BUTTON, MULTI	
56	4-070-763-11	BUTTON, RESET	
57	4-070-764-11	CAP, INPUT SELECTION SWITCH	
58	* A-1372-632-A	H BOARD, COMPLETE	
59	4-029-432-01	SCREW (3X12), (+) BVWHTP	
60	⚠ 8-738-813-61	ITC ASSY (21TKC-R1) [NH]	61-63
60	⚠ 8-738-821-61	ITC ASSY (21TKC-RS1) [SH]	61-63
61	⚠ 8-451-509-11	DEFLECTION YOKE (Y21TKM-M)	
62	⚠ 1-452-912-61	NECK ASSEMBLY (NA-2914)	
63	2-162-100-21	SPACER, DEFLECTION YOKE	
64	* 4-047-316-01	SPRING, EXTENSION	
65	⚠ 1-419-130-21	COIL, LANDING CORRECTION	
66	⚠ 1-419-128-21	COIL, DEGAUSSING	
67	⚠ 1-419-129-21	COIL, LANDING CORRECTION	
68	4-062-670-01	SPACER, PICTURE TUBE	
69	4-365-808-01	SCREW (5), TAPPING	
70	4-070-730-01	HOLDER, PRINTED CIRCUIT BOARD	
71	* A-1394-980-A	N BOARD, COMPLETE	
72	* A-1388-250-B	J BOARD, COMPLETE	
73	X-4037-388-1	STAND ASSY	74-77
74	4-061-396-01	STOPPER (A)	
75	4-063-397-01	RING, TILT SWIVEL	
76	* 4-061-996-01	CUSHION	
77	4-070-735-02	STOPPER (B)	
78	4-041-021-02	HOLDER, DEGAUSE COIL	
79	4-071-175-01	HOLDER, DGC	
80	4-308-870-00	CLIP, LEAD WIRE	
81	1-452-032-00	MAGNET, DISK: 10mmϕ	
82	1-452-094-00	MAGNET, ROTATABLE DISK: 15mmϕ	
83	4-051-736-21	PIECE A (90), CONV. CORRECT	

6-3. PACKING MATERIALS



REF.NO.	PART NO.	DESCRIPTION	REMARK
101	* 4-069-809-02	CUSHION (UPPER) (ASSY)	
102	* 4-041-927-31	BAG, POLYETHYLENE	
103	* 4-069-810-01	CUSHION (LOWER) (ASSY)	
104	* 4-074-008-01	INDIVIDUAL CARTON	
105	3-868-358-01	MANUAL, INSTRUCTION	

SECTION 7
ELECTRICAL PARTS LIST

A

NOTE:

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

RESISTORS
- All resistors are in ohms
- F : nonflammable

REF.NO.	PART NO.	DESCRIPTION			REMARK
*	A-1298-874-E	A BOARD, COMPLETE			
		**********			
	7-682-950-01	SCREW +PSW 3X12 (IC403)			
		<CAPACITOR>			
C101	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C102	1-104-664-11	ELECT	47µF	20% 25V	
C103	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C104	1-104-664-11	ELECT	47µF	20% 25V	
C107	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C108	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C109	1-163-229-11	CERAMIC CHIP	12pF	5% 50V	
C110	1-163-275-11	CERAMIC CHIP	0.001µF	5% 50V	
C112	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C113	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C114	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C115	1-104-341-11	FILM	0.1µF	10% 250V	
C120	1-104-341-11	FILM	0.1µF	10% 250V	
C201	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C202	1-104-664-11	ELECT	47µF	20% 25V	
C203	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C204	1-104-664-11	ELECT	47µF	20% 25V	
C205	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C206	1-109-982-11	CERAMIC CHIP	1µF	10% 10V	
C207	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C208	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C209	1-163-227-11	CERAMIC CHIP	10pF	0.5pF 50V	
C210	1-163-275-11	CERAMIC CHIP	0.001µF	5% 50V	
C212	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C213	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C214	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C215	1-104-341-11	FILM	0.1µF	10% 250V	
C216	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C220	1-104-341-11	FILM	0.1µF	10% 250V	
C301	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C302	1-104-664-11	ELECT	47µF	20% 25V	
C303	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C304	1-104-664-11	ELECT	47µF	20% 25V	
C307	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C308	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C309	1-163-227-11	CERAMIC CHIP	10pF	0.5pF 50V	
C310	1-163-275-11	CERAMIC CHIP	0.001µF	5% 50V	
C312	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C313	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C314	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C315	1-104-341-11	FILM	0.1µF	10% 250V	
C320	1-104-341-11	FILM	0.1µF	10% 250V	
C401	1-126-964-11	ELECT	10µF	20% 50V	
C402	1-104-664-11	ELECT	47µF	20% 25V	
C403	1-163-259-91	CERAMIC CHIP	220pF	5% 50V	
C404	1-163-259-91	CERAMIC CHIP	220pF	5% 50V	
C405	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C406	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C407	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C408	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C410	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C411	1-126-934-11	ELECT	220µF	20% 16V	
C413	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C415	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C416	1-126-961-11	ELECT	2.2µF	20% 50V	
C417	1-104-574-11	CERAMIC	0.0047µF	10% 2KV	
C419	1-162-318-11	CERAMIC	0.001µF	10% 500V	
C420	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C421	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C422	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C423	1-104-664-11	ELECT	47µF	20% 25V	
C424	1-162-318-11	CERAMIC	0.001µF	10% 500V	
C425	1-163-251-11	CERAMIC CHIP	100pF	5% 50V	
C426	1-163-251-11	CERAMIC CHIP	100pF	5% 50V	
C427	1-163-235-11	CERAMIC CHIP	22pF	5% 50V	
C430	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C431	1-163-275-11	CERAMIC CHIP	0.001µF	5% 50V	
C432	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C433	1-162-318-11	CERAMIC	0.001µF	10% 500V	
C434	1-162-318-11	CERAMIC	0.001µF	10% 500V	
C435	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C436	1-164-489-11	CERAMIC CHIP	0.22µF	10% 16V	
C437	1-126-935-11	ELECT	470µF	20% 16V	
C438	1-115-339-11	CERAMIC CHIP	0.1µF	10% 50V	
C440	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C441	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C442	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C443	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C444	1-162-318-11	CERAMIC	0.001µF	10% 500V	

A

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C446	1-104-664-11	ELECT	47µF	20%	25V
C449	1-109-982-11	CERAMIC CHIP	1µF	10%	10V
C450	1-107-823-11	CERAMIC CHIP	0.47µF	10%	16V
C456	1-164-489-11	CERAMIC CHIP	0.22µF	10%	16V
C457	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C458	1-115-339-11	CERAMIC CHIP	0.1µF	10%	50V
C459	1-128-560-11	ELECT	22µF	20%	100V
C462	1-115-339-11	CERAMIC CHIP	0.1µF	10%	50V
C463	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C464	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C467	1-107-957-11	ELECT	1µF	20%	250V
		<CONNECTOR>			
CN401	1-793-183-11	CONNECTOR, D SUB 15P			
CN402*	1-564-509-11	PLUG, CONNECTOR 6P			
CN403	1-784-463-11	CONNECTOR, FFC/FPC 21P			
CN405*	1-564-524-11	PLUG, CONNECTOR 9P			
CN406*	1-766-179-11	PIN, CONNECTOR (PC BOARD) 2P			
		<DIODE>			
D101	8-719-062-51	DIODE 1PS226-115			
D102	8-719-062-51	DIODE 1PS226-115			
D103	8-719-066-10	DIODE 1PS181-115			
D105	8-719-051-85	DIODE HSS83TD			
D106	8-719-052-12	DIODE 1SS376TE-17			
D107	8-719-052-12	DIODE 1SS376TE-17			
D201	8-719-062-51	DIODE 1PS226-115			
D202	8-719-062-51	DIODE 1PS226-115			
D203	8-719-066-10	DIODE 1PS181-115			
D205	8-719-051-85	DIODE HSS83TD			
D206	8-719-052-12	DIODE 1SS376TE-17			
D207	8-719-052-12	DIODE 1SS376TE-17			
D301	8-719-062-51	DIODE 1PS226-115			
D302	8-719-062-51	DIODE 1PS226-115			
D303	8-719-066-10	DIODE 1PS181-115			
D305	8-719-051-85	DIODE HSS83TD			
D306	8-719-052-12	DIODE 1SS376TE-17			
D307	8-719-052-12	DIODE 1SS376TE-17			
D402	8-719-066-11	DIODE 1PS184-115			
D403	8-719-982-36	ZENER DIODE MTZJ-39B			
D405	8-719-911-19	DIODE 1SS119-25			
D406	8-719-062-51	DIODE 1PS226-115			
D407	8-719-062-51	DIODE 1PS226-115			
		<FERRITE BEAD>			
FB102	1-500-419-22	FERRITE			
FB202	1-500-419-22	FERRITE			
FB302	1-500-419-22	FERRITE			
FB402	1-412-911-11	FERRITE	1.1µH		
FB403	1-412-911-11	FERRITE	1.1µH		
FB404	1-412-911-11	FERRITE	1.1µH		
FB405	1-412-911-11	FERRITE	1.1µH		
FB406	1-412-911-11	FERRITE	1.1µH		
FB411	1-412-911-11	FERRITE	1.1µH		
		<IC>			
IC401	8-759-584-87	IC M52757FP-TP			
IC402	8-759-584-86	IC M52749FP-TP			
IC403	8-749-015-91	IC FA4301			
IC404	8-759-585-72	IC CXD9514M			
IC405	8-759-701-01	IC NJM2904M			
IC406	8-749-015-92	IC H8D2972			
IC407	8-759-925-74	IC SN74HC04ANS			
		<COIL>			
L402	1-412-529-11	INDUCTOR	22µH		
L403	1-412-537-31	INDUCTOR	100µH		
L404	1-414-940-21	INDUCTOR	100µH		
L405	1-412-529-11	INDUCTOR	22µH		
		<IC LINK>			
PS401⚠	1-533-590-31	LINK, IC (1A/90V AC, 60V DC)			
		<TRANSISTOR>			
Q101	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q201	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q301	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q401	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q402	8-729-050-41	TRANSISTOR 2SJ360TE12L			
Q406	8-729-216-22	TRANSISTOR 2SA1162-G			
Q407	8-729-028-74	TRANSISTOR DTA114TUA-T106			
Q410	8-729-032-61	TRANSISTOR 2SC5022-02			
		<RESISTOR>			
R101	1-215-394-00	METAL	75	1%	1/4W
R103	1-215-394-00	METAL	75	1%	1/4W
R105	1-216-017-91	RES,CHIP	47	5%	1/10W
R106	1-216-017-91	RES,CHIP	47	5%	1/10W
R107	1-216-045-00	RES,CHIP	680	5%	1/10W
R109	1-216-075-00	RES,CHIP	12K	5%	1/10W
R110	1-216-097-91	RES,CHIP	100K	5%	1/10W
R111	1-216-041-00	RES,CHIP	470	5%	1/10W
R112	1-216-009-91	RES,CHIP	22	5%	1/10W
R113	1-216-017-91	RES,CHIP	47	5%	1/10W
R114	1-216-009-91	RES,CHIP	22	5%	1/10W
R115	1-219-742-11	CARBON	47	5%	1/2W
R116	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R117	1-216-121-91	RES,CHIP	1M	5%	1/10W
R118	1-216-121-91	RES,CHIP	1M	5%	1/10W
R119	1-216-077-91	RES,CHIP	15K	5%	1/10W
R120	1-216-113-00	RES,CHIP	470K	5%	1/10W
R121	1-216-113-00	RES,CHIP	470K	5%	1/10W
R122	1-216-081-00	RES,CHIP	22K	5%	1/10W
R128	1-216-065-91	RES,CHIP	4.7K	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R130	1-216-113-00	RES,CHIP	470K	5%	1/10W
R137	1-249-413-11	CARBON	470	5%	1/4W
R138	1-216-017-91	RES,CHIP	47	5%	1/10W
R161	1-216-041-00	RES,CHIP	470	5%	1/10W
R201	1-215-394-00	METAL	75	1%	1/4W
R202	1-216-097-91	RES,CHIP	100K	5%	1/10W
R203	1-215-394-00	METAL	75	1%	1/4W
R205	1-216-017-91	RES,CHIP	47	5%	1/10W
R206	1-216-017-91	RES,CHIP	47	5%	1/10W
R207	1-216-045-00	RES,CHIP	680	5%	1/10W
R209	1-216-075-00	RES,CHIP	12K	5%	1/10W
R210	1-216-097-91	RES,CHIP	100K	5%	1/10W
R211	1-216-033-00	RES,CHIP	220	5%	1/10W
R212	1-216-009-91	RES,CHIP	22	5%	1/10W
R213	1-216-017-91	RES,CHIP	47	5%	1/10W
R214	1-216-009-91	RES,CHIP	22	5%	1/10W
R215	1-219-742-11	CARBON	47	5%	1/2W
R216	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R217	1-216-121-91	RES,CHIP	1M	5%	1/10W
R218	1-216-121-91	RES,CHIP	1M	5%	1/10W
R219	1-216-077-91	RES,CHIP	15K	5%	1/10W
R220	1-216-113-00	RES,CHIP	470K	5%	1/10W
R221	1-216-113-00	RES,CHIP	470K	5%	1/10W
R222	1-216-081-00	RES,CHIP	22K	5%	1/10W
R228	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R230	1-216-113-00	RES,CHIP	470K	5%	1/10W
R237	1-249-413-11	CARBON	470	5%	1/4W
R238	1-216-017-91	RES,CHIP	47	5%	1/10W
R261	1-216-041-00	RES,CHIP	470	5%	1/10W
R301	1-215-394-00	METAL	75	1%	1/4W
R303	1-215-394-00	METAL	75	1%	1/4W
R305	1-216-017-91	RES,CHIP	47	5%	1/10W
R306	1-216-017-91	RES,CHIP	47	5%	1/10W
R307	1-216-045-00	RES,CHIP	680	5%	1/10W
R309	1-216-075-00	RES,CHIP	12K	5%	1/10W
R310	1-216-097-91	RES,CHIP	100K	5%	1/10W
R311	1-216-033-00	RES,CHIP	220	5%	1/10W
R312	1-216-009-91	RES,CHIP	22	5%	1/10W
R313	1-216-017-91	RES,CHIP	47	5%	1/10W
R314	1-216-009-91	RES,CHIP	22	5%	1/10W
R315	1-219-742-11	CARBON	47	5%	1/2W
R316	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R317	1-216-121-91	RES,CHIP	1M	5%	1/10W
R318	1-216-121-91	RES,CHIP	1M	5%	1/10W
R319	1-216-077-91	RES,CHIP	15K	5%	1/10W
R320	1-216-113-00	RES,CHIP	470K	5%	1/10W
R321	1-216-113-00	RES,CHIP	470K	5%	1/10W
R322	1-216-081-00	RES,CHIP	22K	5%	1/10W
R328	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R330	1-216-113-00	RES,CHIP	470K	5%	1/10W
R337	1-249-413-11	CARBON	470	5%	1/4W
R338	1-216-017-91	RES,CHIP	47	5%	1/10W
R361	1-216-041-00	RES,CHIP	470	5%	1/10W
R402	1-216-049-91	RES,CHIP	1K	5%	1/10W
R403	1-216-081-00	RES,CHIP	22K	5%	1/10W
R404	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R405	1-216-045-00	RES,CHIP	680	5%	1/10W
R406	1-216-097-91	RES,CHIP	100K	5%	1/10W
R407	1-218-768-11	METAL CHIP	470K	0.50%	1/10W
R409	1-216-129-00	RES,CHIP	2.2M	5%	1/10W
R411	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R412	1-216-105-91	RES,CHIP	220K	5%	1/10W
R413	1-216-097-91	RES,CHIP	100K	5%	1/10W
R414	1-216-089-91	RES,CHIP	47K	5%	1/10W
R415	1-216-097-91	RES,CHIP	100K	5%	1/10W
R417	1-216-121-91	RES,CHIP	1M	5%	1/10W
R418	1-260-127-11	CARBON	220K	5%	1/2W
R419	1-216-033-00	RES,CHIP	220	5%	1/10W
R420	1-216-025-91	RES,CHIP	100	5%	1/10W
R421	1-216-025-91	RES,CHIP	100	5%	1/10W
R422	1-216-025-91	RES,CHIP	100	5%	1/10W
R424	1-216-049-91	RES,CHIP	1K	5%	1/10W
R425	1-216-049-91	RES,CHIP	1K	5%	1/10W
R426	1-216-105-91	RES,CHIP	220K	5%	1/10W
R427	1-216-049-91	RES,CHIP	1K	5%	1/10W
R428	1-216-025-91	RES,CHIP	100	5%	1/10W
R430	1-216-025-91	RES,CHIP	100	5%	1/10W
R431	1-216-113-00	RES,CHIP	470K	5%	1/10W
R436	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R438	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R439	1-216-041-00	RES,CHIP	470	5%	1/10W
R441	1-216-121-91	RES,CHIP	1M	5%	1/10W
R442	1-216-049-91	RES,CHIP	1K	5%	1/10W
R443	1-216-025-91	RES,CHIP	100	5%	1/10W
R444	1-216-025-91	RES,CHIP	100	5%	1/10W
R445	1-216-025-91	RES,CHIP	100	5%	1/10W
R446	1-216-025-91	RES,CHIP	100	5%	1/10W
R447	1-216-017-91	RES,CHIP	47	5%	1/10W
R448	1-216-017-91	RES,CHIP	47	5%	1/10W
R449	1-216-081-00	RES,CHIP	22K	5%	1/10W
R450	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R451	1-216-115-00	RES,CHIP	560K	5%	1/10W
R453	1-216-073-00	RES,CHIP	10K	5%	1/10W
R454	1-216-129-00	RES,CHIP	2.2M	5%	1/10W
R455	1-216-097-91	RES,CHIP	100K	5%	1/10W
R456	1-216-025-91	RES,CHIP	100	5%	1/10W
R457	1-211-895-11	METAL	10M	10%	1/4W
R458	1-219-398-51	METAL	2.2M	5%	1W
R459	1-211-895-11	METAL	10M	10%	1/4W
R460	1-216-073-00	RES,CHIP	10K	5%	1/10W
R461	1-216-105-91	RES,CHIP	220K	5%	1/10W
R463	1-216-097-91	RES,CHIP	100K	5%	1/10W
R464	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R488	1-216-089-91	RES,CHIP	47K	5%	1/10W
R490	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R491	1-216-065-91	RES,CHIP	4.7K	5%	1/10W

<SPARK GAP>

SG101	1-576-354-21	GAP, SPARK
SG201	1-576-354-21	GAP, SPARK

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Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
SG301	1-576-354-21	GAP, SPARK	
SG401	1-576-354-21	GAP, SPARK	
SG402	1-519-422-11	GAP, SPARK	
		<SOCKET>	
SK401	⚠ 1-451-499-11	SOCKET, PICTURE TUBE	
		<CRYSTAL>	
X401	1-781-472-21	VIBRATOR, CERAMIC (8MHz)	

****

* A-1316-443-B G BOARD, COMPLETE
****

1-533-223-11 HOLDER, FUSE (F601)
4-382-854-11 SCREW (M3X10), P, SW (+)
(D610, D652, D680, IC610, IC654, Q603, Q630)

<CAPACITOR>

C601	⚠ 1-113-513-11	FILM	1µF	20%	275V
C602	⚠ 1-113-513-11	FILM	1µF	20%	275V
C603	⚠ 1-113-900-51	CERAMIC	470pF	10%	250V
C604	⚠ 1-113-900-51	CERAMIC	470pF	10%	250V
C605	⚠ 1-113-926-91	CERAMIC	0.0047µF		250V
C606	⚠ 1-113-926-91	CERAMIC	0.0047µF		250V
C607	1-113-900-11	CERAMIC	470pF	10%	250V
C610	1-117-849-11	ELECT	330µF	20%	450V
C611	1-137-479-11	FILM	1µF	10%	400V
C612	1-136-169-00	FILM	0.22µF	5%	50V
C613	1-126-967-11	ELECT	47µF	20%	50V
C614	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C620	1-128-990-11	FILM	27000pF	5%	800V
C621	1-104-330-91	CERAMIC	470pF	10%	1KV
C622	1-104-330-91	CERAMIC	470pF	10%	1KV
C623	1-136-171-00	FILM	0.33µF	5%	50V
C624	1-136-171-00	FILM	0.33µF	5%	50V
C625	1-136-167-00	FILM	0.15µF	5%	50V
C626	1-136-167-00	FILM	0.15µF	5%	50V
C627	1-104-330-91	CERAMIC	470pF	10%	1KV
C629	1-137-370-11	FILM	0.01µF	5%	50V
C630	1-163-005-11	CERAMIC CHIP	470pF	10%	50V
C631	1-104-665-11	ELECT	100µF	20%	25V
C633	1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
C634	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C650	1-107-656-11	ELECT	100µF	20%	250V
C651	1-107-651-11	ELECT	4.7µF	20%	250V
C652	1-128-563-11	ELECT	100µF	20%	100V
C653	1-128-581-11	ELECT	4.7µF	20%	100V
C654	1-126-943-11	ELECT	2200µF	20%	25V
C655	1-104-664-11	ELECT	47µF	20%	25V
C656	1-126-943-11	ELECT	2200µF	20%	25V
C657	1-104-664-11	ELECT	47µF	20%	25V
C658	1-126-927-11	ELECT	2200µF	20%	10V
C659	1-128-339-11	ELECT	2200µF	20%	10V
C660	1-126-967-11	ELECT	47µF	20%	50V
C661	1-107-429-11	CERAMIC	0.0022µF	10%	1KV
C662	1-137-370-11	FILM	0.01µF	5%	50V
C663	1-126-965-11	ELECT	22µF	20%	50V
C665	1-107-909-11	ELECT	47µF	20%	10V
C666	1-126-964-11	ELECT	10µF	20%	50V
C667	1-107-909-11	ELECT	47µF	20%	16V
C680	1-115-747-51	ELECT	0.0068F	20%	10V
C681	1-104-664-11	ELECT	47µF	20%	10V
C682	1-137-368-11	FILM	0.0047µF	5%	50V
C683	1-104-664-11	ELECT	47µF	20%	10V
C684	1-128-526-11	ELECT	100µF	20%	10V
C685	1-128-526-11	ELECT	100µF	20%	10V
C686	1-104-664-11	ELECT	47µF	20%	10V
C687	1-126-964-11	ELECT	10µF	20%	50V
C692	1-115-339-11	CERAMIC CHIP	0.1µF	10%	50V

<CONNECTOR>

CN601*	1-580-689-11	PIN, CONNECTOR (PC BOARD) 4P
CN602*	1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P
CN603*	1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P
CN650*	1-564-510-11	PLUG, CONNECTOR 7P
CN652*	1-564-512-11	PLUG, CONNECTOR 9P
CN653*	1-564-509-11	PLUG, CONNECTOR 6P
CN654*	1-564-511-11	PLUG, CONNECTOR 8P

<DIODE>

D610	⚠ 8-719-510-53	DIODE D4SB60L
D612	8-719-911-19	DIODE 1SS119-25
D613	8-719-304-63	DIODE RM11C
D620	8-719-911-19	DIODE 1SS119-25
D631	8-719-063-73	DIODE D1NL20U-TR
D632	8-719-059-23	DIODE P6KE200AG23
D633	8-719-069-63	DIODE ERB38-06V1
D634	8-719-911-19	DIODE 1SS119-25
D635	8-719-110-53	ZENER DIODE RD20ESB2
D637	8-719-911-19	DIODE 1SS119-25
D650	8-719-064-49	DIODE D4SBL40
D651	8-719-063-73	DIODE D1NL20U-TR
D652	8-719-052-91	DIODE D4SBS4-F
D653	8-719-022-97	DIODE D2S4MF
D654	8-719-022-97	DIODE D2S4MF
D655	8-719-063-73	DIODE D1NL20U-TR
D656	8-719-911-19	DIODE 1SS119-25
D660	8-719-110-57	ZENER DIODE RD22ESB2
D661	8-719-110-31	ZENER DIODE RD12ESB2
D663	8-719-911-19	DIODE 1SS119-25
D664	8-719-110-57	ZENER DIODE RD22ESB2
D665	8-719-911-19	DIODE 1SS119-25
D666	8-719-911-19	DIODE 1SS119-25

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Replace only with the part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK
D680	8-719-989-87	DIODE YG802C09	
D681	8-719-109-89	ZENER DIODE RD5.6ESB2	
D682	8-719-121-26	ZENER DIODE RD9.1ESL2	
D683	8-719-911-19	DIODE 1SS119-25	
D690	8-719-911-19	DIODE 1SS119-25	
D692	8-719-911-19	DIODE 1SS119-25	
		<FUSE>	
F601 ⚠	1-576-233-11	FUSE (H.B.C.) (6.3A/250V)	
		<FERRITE BEAD>	
FB630	1-410-396-41	FERRITE 0.45µH	
FB632 ⚠	1-410-397-31	FERRITE 1.1µH	
		<IC>	
IC610	8-749-015-89	IC MZ1530	
IC630	8-759-535-32	IC FA13842P	
IC650	8-749-012-49	IC DM-57N	
IC651	8-759-592-79	IC BA00AST-V5	
IC652	8-759-496-15	IC BA05ST-V5	
IC653	8-759-450-47	IC BA05T	
IC654	8-759-643-66	IC µPC2912HF (12)	
IC680	8-759-321-95	IC HA17431PA	
		<COIL>	
L610	1-419-126-21	COIL, CHOKE (AFC) 216µH	
L611	1-411-674-11	INDUCTOR 68µH	
L650	1-414-742-21	INDUCTOR 22µH	
L651	1-414-742-21	INDUCTOR 22µH	
L652	1-412-529-11	INDUCTOR 22µH	
L653	1-412-529-11	INDUCTOR 22µH	
L680	1-414-742-21	INDUCTOR 22µH	
		<PHOTO COUPLER>	
PH620	8-749-924-35	PHOTO COUPLER ON3171-R	
PH630	8-749-924-35	PHOTO COUPLER ON3171-R	
		<IC LINK>	
PS650⚠	1-533-593-31	LINK, IC (2A/90V AC, 60V DC)	
		<TRANSISTOR>	
Q603	8-729-045-39	TRANSISTOR MX0842AB-F	
Q610	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q621	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q630	8-729-045-03	TRANSISTOR 2SK2647-01MR-F91	
Q631	8-729-041-66	TRANSISTOR 2SC4015TV2	
Q632	8-729-041-66	TRANSISTOR 2SC4015TV2	
Q633	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q650	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q651	8-729-230-45	TRANSISTOR 2SC2458-YGR	
Q652	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q653	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q654	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q667	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q670	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q671	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q691	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<RESISTOR>	
R601 ⚠	1-220-825-91	CARBON 330K 5% 1/2W	
R602	1-216-465-11	METAL OXIDE 27K 5% 2W	F
R603	1-247-895-91	CARBON 470K 5% 1/4W	
R604	1-216-113-00	RES,CHIP 470K 5% 1/10W	
R605	1-216-113-00	RES,CHIP 470K 5% 1/10W	
R606	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R607	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R608	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R609	1-216-069-00	RES,CHIP 6.8K 5% 1/10W	
R610	1-217-152-00	METAL 0.33 10% 2W	
R611	1-217-153-00	METAL 0.47 10% 2W	
R612	1-249-429-11	CARBON 10K 5% 1/4W	
R613	1-216-089-91	RES,CHIP 47K 5% 1/10W	
R614	1-247-807-31	CARBON 100 5% 1/4W	
R615	1-249-427-11	CARBON 6.8K 5% 1/4W	
R616	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R617	1-247-831-91	CARBON 1K 5% 1/4W	
R618	1-216-369-00	METAL OXIDE 1 5% 2W	F
R620	1-202-933-61	FUSIBLE 0.1 10% 1/2W	F
R621	1-249-432-11	CARBON 18K 5% 1/4W	
R622	1-216-089-91	RES,CHIP 47K 5% 1/10W	
R623	1-218-642-11	METAL OXIDE 100K 5% 1W	F
R624	1-218-642-11	METAL OXIDE 100K 5% 1W	F
R625	1-216-349-00	METAL OXIDE 1 5% 1W	F
R626	1-216-349-00	METAL OXIDE 1 5% 1W	F
R627	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R628	1-216-695-11	METAL CHIP 68K 0.50% 1/10W	
R629	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R630	1-249-387-11	CARBON 3.3 5% 1/4W	F
R632	1-215-399-00	METAL 120 1% 1/4W	
R633	1-260-135-11	CARBON 1M 5% 1/2W	
R634	1-260-135-11	CARBON 1M 5% 1/2W	
R635	1-216-465-11	METAL OXIDE 27K 5% 2W	F
R636	1-247-863-91	CARBON 22K 5% 1/4W	
R637	1-219-134-11	FUSIBLE 0.1 10% 1/4W	
R638	1-219-134-11	FUSIBLE 0.1 10% 1/4W	
R649	1-249-437-11	CARBON 47K 5% 1/4W	F
R650	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R652	1-216-113-00	RES,CHIP 470K 5% 1/10W	
R653	1-249-413-11	CARBON 470 5% 1/4W	
R654	1-211-796-11	FUSIBLE 1 5% 1/2W	F
R655	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R656	1-260-292-11	CARBON 1 5% 1/2W	
R657	1-249-443-11	CARBON 0.47 5% 1/4W	F
R658	1-216-073-00	RES,CHIP 10K 5% 1/10W	

G D

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
R659	1-216-049-91	RES,CHIP	1K	5%	1/10W
R660	1-216-073-00	RES,CHIP	10K	5%	1/10W
R661	1-247-807-31	CARBON	100	5%	1/4W
R662	1-216-073-00	RES,CHIP	10K	5%	1/10W
R663	1-216-073-00	RES,CHIP	10K	5%	1/10W
R664	1-216-073-00	RES,CHIP	10K	5%	1/10W
R665	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R666	1-216-073-00	RES,CHIP	10K	5%	1/10W
R667	1-216-089-91	RES,CHIP	47K	5%	1/10W
R668	1-215-457-00	METAL	33K	1%	1/4W
R670	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R671	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R672	1-216-664-11	METAL CHIP	3.6K	0.50%	1/10W
R673	1-216-073-00	RES,CHIP	10K	5%	1/10W
R674	1-216-097-91	RES,CHIP	100K	5%	1/10W
R675	1-216-668-11	METAL CHIP	5.1K	0.50%	1/10W
R676	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R677	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R678	1-216-391-11	METAL OXIDE	1.5	5%	3W F
R680	1-215-475-00	METAL	180K	1%	1/4W
R681	1-216-073-00	RES,CHIP	10K	5%	1/10W
R682	1-216-049-91	RES,CHIP	1K	5%	1/10W
R683	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R684	1-216-073-00	RES,CHIP	10K	5%	1/10W
R685	1-216-049-91	RES,CHIP	1K	5%	1/10W
R686	1-216-033-00	RES,CHIP	220	5%	1/10W
R687	1-216-081-00	RES,CHIP	22K	5%	1/10W
R688	1-215-473-00	METAL	150K	1%	1/4W
R693	1-260-085-11	CARBON	68	5%	1/2W
R694	1-216-073-00	RES,CHIP	10K	5%	1/10W
R695	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R696	1-249-407-11	CARBON	150	5%	1/4W

<RELAY>

RY602 ⚠ 1-755-318-11 RELAY, POWER
RY603 ⚠ 1-755-067-21 RELAY

<SPARK GAP>

SG601 ⚠ 1-533-982-11 GAP, SPARK

<TRANSFORMER>

T601 ⚠ 1-429-180-11 TRANSFORMER, LINE FILTER
T620 1-433-894-11 TRANSFORMER, CONVERTER (PIT)
T621 1-429-992-11 TRANSFORMER, CONVERTER (PRT)
T630 1-433-895-31 TRANSFORMER, CONVERTER (SRT)

<THERMISTOR>

TH601 ⚠ 1-809-260-11 THERMISTOR, POWER
THP601 ⚠ 1-809-827-31 THERMISTOR, POSITIVE

<VARISTOR>

VDR601 ⚠ 1-801-268-51 VARISTOR TNR14V471K660
VDR602 ⚠ 1-810-622-11 VARISTOR

****

* A-1346-827-D D BOARD, COMPLETE
****

3-710-578-01 COVER, VOLUME, 6 MOLD (RV901)
4-070-828-01 INSULATING SHEET (Q515)
4-070-829-02 INSULATING SHEET (IC502)
4-070-830-01 INSULATING SHEET (IC701)
4-382-854-11 SCREW (M3X10), P, SW (+)
(IC701, Q704, Q705, Q905, Q906, R918)

7-685-647-79 SCREW +BVTP 3X10 TYPE2 TT(B)
(D511, IC502, Q508, Q515, R547)

<CAPACITOR>

C501	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C502	1-136-169-00	FILM	0.22µF	5%	50V
C503	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C504	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
C505	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C506	1-137-194-81	FILM	0.47µF	5%	50V
C507	1-136-169-00	FILM	0.22µF	5%	50V
C508	1-126-965-11	ELECT	22µF	20%	50V
C509	1-117-670-31	FILM	0.82µF	5%	250V
C510	1-117-398-11	ELECT	33µF	20%	250V
C511	1-163-113-00	CERAMIC CHIP	68pF	5%	50V
C512	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C513	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
C514	1-106-375-12	MYLAR	0.022µF		200V
C515	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C516	1-126-935-11	ELECT	470µF	20%	16V
C517	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C518	1-137-194-81	FILM	0.47µF	5%	50V
C519	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C520	1-107-914-11	ELECT	1000µF	20%	25V
C521	1-117-666-11	FILM	0.39µF	5%	250V
C522	1-137-368-11	FILM	0.0047µF	5%	50V
C523	1-137-368-11	FILM	0.0047µF	5%	50V
C524	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C525	1-104-760-11	CERAMIC CHIP	0.047µF	10%	50V
C526	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C527	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C528	1-117-663-31	FILM	0.22µF	5%	250V
C529	1-104-665-11	ELECT	100µF	20%	25V
C530	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C531	1-107-846-11	FILM	0.1µF	5%	250V
C532	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C533	1-107-889-11	ELECT	220µF	20%	25V
C534	1-107-889-11	ELECT	220µF	20%	25V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C535	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C536	1-126-967-11	ELECT	47µF	20%	50V
C537	1-113-694-11	FILM	0.056µF	5%	400V
C538	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C539	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
C540	1-106-343-00	MYLAR	0.001µF	10%	200V
C541	1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
C542	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C543	1-135-350-11	FILM	3600pF	3%	1.8KV
C544	1-125-925-11	FILM MELF	0.027µF	5%	400V
C545	1-107-597-11	CERAMIC	22pF	5%	500V
C546	1-107-444-11	CERAMIC	100pF	5%	2KV
C547	1-130-061-91	FILM	0.0015µF	5%	630V
C548	1-162-134-11	CERAMIC	470pF	10%	2KV
C549	1-130-495-00	FILM	0.1µF	5%	50V
C550	1-127-833-11	FILM	0.15µF	5%	400V
C551	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
C552	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C554	1-107-444-11	CERAMIC	100pF	5%	2KV
C555	1-107-683-11	ELECT	2.2µF	0	250V
C556	1-115-356-11	FILM	1.2µF	5%	250V
C557	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C558	1-104-665-11	ELECT	100µF	20%	25V
C559	1-107-649-11	ELECT	2.2µF	20%	250V
C560	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C561	1-104-664-11	ELECT	47µF	20%	25V
C562	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C563	1-163-011-11	CERAMIC CHIP	0.0015µF	10%	50V
C564	1-126-960-11	ELECT	1µF	20%	50V
C565	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C566	1-137-370-11	FILM	0.01µF	5%	50V
C567	1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
C568	1-104-760-11	CERAMIC CHIP	0.047µF	10%	50V
C571	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C572	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C573	1-106-375-12	MYLAR	0.022µF		200V
C574	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
C575	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C577	1-126-964-11	ELECT	10µF	20%	50V
C701	1-128-560-11	ELECT	22µF	20%	100V
C702	1-128-562-11	ELECT	47µF	20%	100V
C703	1-104-331-11	CERAMIC	0.0022µF	10%	1KV
C704	1-104-568-11	CERAMIC	470pF	10%	2KV
C706	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C707	1-130-495-00	FILM	0.1µF	5%	50V
C708	1-126-942-61	ELECT	1000µF	20%	25V
C709	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C710	1-107-894-11	ELECT	220µF	20%	35V
C711	1-163-019-00	CERAMIC CHIP	0.0068µF	10%	50V
C712	1-106-228-00	MYLAR	0.22µF	10%	100V
C713	1-126-942-61	ELECT	1000µF	20%	25V
C715	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C720	1-126-964-11	ELECT	10µF	20%	50V
C901	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C902	1-104-665-11	ELECT	100µF	20%	25V
C903	1-126-964-11	ELECT	10µF	20%	50V
C905	1-163-127-00	CERAMIC CHIP	270pF	5%	50V
C907	1-163-257-11	CERAMIC CHIP	180pF	5%	50V
C908	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C909	1-126-935-11	ELECT	470µF	20%	16V
C910	1-126-962-11	ELECT	3.3µF	20%	50V
C912	1-106-383-00	MYLAR	0.047µF	10%	200V
C913	1-119-748-11	ELECT	33µF	20%	400V
C914	1-106-383-00	MYLAR	0.047µF	10%	200V
C915	1-136-169-00	FILM	0.22µF	5%	50V
C916	1-117-626-11	FILM	2000pF	3%	1.2KV
C917	1-117-665-11	FILM	0.33µF	5%	250V
C918	1-106-359-00	MYLAR	0.0047µF	10%	100V
C919	1-115-350-51	CERAMIC	0.0047µF		2KV
C920	1-137-372-11	FILM	0.022µF	5%	50V
C921	1-106-228-00	MYLAR	0.22µF	10%	100V
C922	1-106-220-00	MYLAR	0.1µF	10%	100V
C923	1-106-355-12	MYLAR	0.0033µF	10%	200V
C924	1-106-220-00	MYLAR	0.1µF	10%	100V
C925	1-126-967-11	ELECT	47µF	20%	50V
C926	1-126-964-11	ELECT	10µF	20%	50V
C927	1-163-243-11	CERAMIC CHIP	47pF	5%	50V
C928	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C929	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C930	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C931	1-126-964-11	ELECT	10µF	20%	50V
C932	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C933	1-126-960-11	ELECT	1µF	20%	50V
C935	1-163-275-11	CERAMIC CHIP	0.001µF	5%	50V

<CONNECTOR>

CN501*	1-564-509-11	PLUG, CONNECTOR 6P
CN502*	1-564-510-11	PLUG, CONNECTOR 7P
CN503*	1-508-879-11	BASE POST
CN504	1-784-786-11	CONNECTOR, FFC 25P
CN505	1-784-786-11	CONNECTOR, FFC 25P
CN506	1-764-101-11	PIN, CONNECTOR (PC BOARD) 2P
CN508*	1-564-511-11	PLUG, CONNECTOR 8P
CN509*	1-778-955-11	PIN, CONNECTOR (PC BOARD) 10P

<DIODE>

D504	8-719-988-61	DIODE 1SS355TE-17
D505	8-719-110-36	ZENER DIODE RD13ESB2
D506	8-719-991-33	DIODE 1SS133T-77
D507	8-719-063-89	DIODE YG911S3R
D508	8-719-031-79	DIODE D5SC4M
D509	8-719-991-33	DIODE 1SS133T-77
D510	8-719-109-85	ZENER DIODE RD5.1ESB2
D511	8-719-066-36	DIODE FMQ-G5GS
D512	8-719-988-61	DIODE 1SS355TE-17
D513	8-719-991-33	DIODE 1SS133T-77
D514	8-719-991-33	DIODE 1SS133T-77
D515	8-719-109-89	ZENER DIODE RD5.6ESB2
D516	8-719-991-33	DIODE 1SS133T-77
D517	8-719-951-30	DIODE ERA91-02
D519	8-719-988-61	DIODE 1SS355TE-17

D

REF.NO.	PART NO.	DESCRIPTION	REMARK
D520	8-719-988-61	DIODE 1SS355TE-17	
D522	8-719-988-61	DIODE 1SS355TE-17	
D701	8-719-991-33	DIODE 1SS133T-77	
D702	8-719-991-33	DIODE 1SS133T-77	
D703	8-719-991-33	DIODE 1SS133T-77	
D706	8-719-979-58	DIODE EGP10D	
D707	8-719-109-85	ZENER DIODE RD5.1ESB2	
D708	8-719-908-03	DIODE GP08D	
D709	8-719-948-45	DIODE ERA22-08	
D710	8-719-109-85	ZENER DIODE RD5.1ESB2	
D901	8-719-991-33	DIODE 1SS133T-77	
D902	8-719-110-31	ZENER DIODE RD12ESB2	
D904	8-719-988-61	DIODE 1SS355TE-17	
D905	8-719-110-36	ZENER DIODE RD13ESB2	
D906	8-719-063-89	DIODE YG911S3R	
D907	8-719-930-97	ZENER DIODE HZS16NB2TD	
D908	8-719-018-82	DIODE RGP02-20EL-6394	
D909	8-719-930-97	ZENER DIODE HZS16NB2TD	
D910	8-719-991-33	DIODE 1SS133T-77	
D912	8-719-979-58	DIODE EGP10D	
D913	8-719-991-33	DIODE 1SS133T-77	
D914	8-719-991-33	DIODE 1SS133T-77	
D915	8-719-929-72	ZENER DIODE HZS33NB2	
D917	8-719-988-61	DIODE 1SS355TE-17	
D918	8-719-991-33	DIODE 1SS133T-77	
D919	8-719-991-33	DIODE 1SS133T-77	
D920	8-719-928-85	ZENER DIODE HZS4.7NB2	
D921	8-719-988-61	DIODE 1SS355TE-17	
D922	8-719-018-82	DIODE RGP02-20EL-6394	
D923	8-719-988-61	DIODE 1SS355TE-17	
		<FERRITE BEAD>	
FB501	1-410-397-21	FERRITE 1.1µH	
FB502	1-410-397-21	FERRITE 1.1µH	
FB503	1-412-911-11	FERRITE 1.1µH	
FB504	1-412-911-11	FERRITE 1.1µH	
FB505	1-412-911-11	FERRITE 1.1µH	
FB506	1-410-397-21	FERRITE 1.1µH	
FB507	1-410-397-21	FERRITE 1.1µH	
FB901	1-410-397-21	FERRITE 1.1µH	
		<IC>	
IC501	8-759-585-82	IC BA9759F-E2	
IC502	8-759-803-42	IC LA6500-FA	
IC503	8-759-058-50	IC XRA10324AF	
IC701	8-759-444-82	IC LA7841L	
IC901	8-759-585-81	IC BA9758FS-E2	
		<CHIP CONDUCTOR>	
JR002	1-216-296-91	SHORT 0	
JR003	1-216-295-91	SHORT 0	
JR004	1-216-295-91	SHORT 0	
JR005	1-216-296-91	SHORT 0	
JR006	1-216-295-91	SHORT 0	
JR008	1-216-295-91	SHORT 0	
JR009	1-216-295-91	SHORT 0	
JR010	1-216-295-91	SHORT 0	
JR011	1-216-295-91	SHORT 0	
JR012	1-216-296-91	SHORT 0	
JR013	1-216-295-91	SHORT 0	
JR014	1-216-296-91	SHORT 0	
JR015	1-216-296-91	SHORT 0	
JR016	1-216-295-91	SHORT 0	
		<COIL>	
L501	1-412-537-31	INDUCTOR 100µH	
L502	1-406-673-11	COIL, CHOKE 2.2mH	
L503	1-406-671-11	COIL, CHOKE 1mH	
L504	1-406-675-11	COIL, CHOKE 4.7mH	
L505	1-416-401-31	COIL, CHOKE 5mH	
L901	1-412-537-31	INDUCTOR 100µH	
L902	1-406-660-41	COIL, CHOKE 15µH	
		<TRANSISTOR>	
Q501	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q502	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q503	8-729-901-97	TRANSISTOR 2SA1036K-Q	
Q504	8-729-901-87	TRANSISTOR 2SC2411K-CQ	
Q505	8-729-901-97	TRANSISTOR 2SA1036K-Q	
Q506	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q507	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q508	8-729-048-53	TRANSISTOR 2SJ569LS-CB11	
Q509	8-729-820-73	TRANSISTOR 2SC3746	
Q510	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q511	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q512	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q513	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q514	8-729-140-50	TRANSISTOR 2SC3209LK	
Q515	8-729-048-48	TRANSISTOR 2SC5570 (LBSONY)	
Q516	8-729-024-95	TRANSISTOR 2SB1565EF	
Q517	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q518	8-729-019-01	TRANSISTOR 2SD2394-EF	
Q519	8-729-033-25	TRANSISTOR DTC114GKA	
Q520	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q521	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q522	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q523	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q524	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q525	8-729-048-49	TRANSISTOR 2SK3262-01MR-F119	
Q526	8-729-027-35	TRANSISTOR DTA143TKA-T146	
Q701	8-729-800-32	TRANSISTOR 2SC2362K-G	
Q702	8-729-178-43	TRANSISTOR 2SC2784-E	
Q703	8-729-204-91	TRANSISTOR 2SA1049-GR	
Q704	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q705	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q706	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q707	8-729-046-80	TRANSISTOR 2SC4634LS-CB11	
Q903	8-729-901-87	TRANSISTOR 2SC2411K-CQ	
Q904	8-729-901-97	TRANSISTOR 2SA1036K-Q	

REF.NO.	PART NO.	DESCRIPTION			REMARK
Q905	8-729-048-53	TRANSISTOR 2SJ569LS-CB11			
Q906	8-729-044-21	TRANSISTOR 2SK2655-01R-F165			
Q907	8-729-033-26	TRANSISTOR DTA114GKAT146			
Q908	8-729-033-25	TRANSISTOR DTC114GKA			
		<RESISTOR>			
R501	1-215-884-11	METAL OXIDE	47	5% 2W	F
R502	1-216-059-00	RES,CHIP	2.7K	5% 1/10W	
R503	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R504	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R505	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R506	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R507	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R508	1-247-815-91	CARBON	220	5% 1/4W	
R509	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R510	1-216-675-91	METAL CHIP	10K	0.50% 1/10W	
R511	1-216-065-91	RES,CHIP	4.7K	5% 1/10W	
R512	1-215-453-00	METAL	22K	1% 1/4W	
R513	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R514	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R515	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R516	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R517	1-216-687-11	METAL CHIP	33K	0.50% 1/10W	
R518	1-216-691-11	METAL CHIP	47K	0.50% 1/10W	
R519	1-216-081-00	RES,CHIP	22K	5% 1/10W	
R520	1-247-791-91	CARBON	22	5% 1/4W	
R521	1-216-667-11	METAL CHIP	4.7K	0.50% 1/10W	
R522	1-249-437-11	CARBON	47K	5% 1/4W	
R523	1-216-033-00	RES,CHIP	220	5% 1/10W	
R524	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R525	1-216-065-91	RES,CHIP	4.7K	5% 1/10W	
R526	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R527	1-216-673-11	METAL CHIP	8.2K	0.50% 1/10W	
R528	1-216-677-11	METAL CHIP	12K	0.50% 1/10W	
R529	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R530	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R531	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R532	1-215-860-11	METAL OXIDE	33	5% 1W	F
R533	1-211-796-11	FUSIBLE	1	5% 1/2W	F
R534	1-216-689-11	METAL CHIP	39K	0.50% 1/10W	
R535	1-216-065-91	RES,CHIP	4.7K	5% 1/10W	
R536	1-216-683-11	METAL CHIP	22K	0.50% 1/10W	
R537	1-249-437-11	CARBON	47K	5% 1/4W	
R538	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R539	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R540	1-215-909-11	METAL OXIDE	47	5% 3W	F
R541	1-216-295-91	SHORT	0		
R542	1-249-437-11	CARBON	47K	5% 1/4W	
R543	1-216-677-11	METAL CHIP	12K	0.50% 1/10W	
R544	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R545	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R546	1-216-381-11	METAL OXIDE	0.22	5% 3W	F
R547	1-219-726-11	METAL	2.2	5% 10W	
R548	1-249-437-11	CARBON	47K	5% 1/4W	
R549	1-260-288-11	CARBON	0.47	5% 1/2W	
R550	1-260-288-11	CARBON	0.47	5% 1/2W	
R551	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R552	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R553	1-247-815-91	CARBON	220	5% 1/4W	
R554	1-216-679-11	METAL CHIP	15K	0.50% 1/10W	
R555	1-216-675-91	METAL CHIP	10K	0.50% 1/10W	
R556	1-216-683-11	METAL CHIP	22K	0.50% 1/10W	
R557	1-216-423-11	METAL OXIDE	27	5% 1W	F
R558	1-249-437-11	CARBON	47K	5% 1/4W	
R559	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R560	1-216-675-91	METAL CHIP	10K	0.50% 1/10W	
R561	1-215-443-00	METAL	8.2K	1% 1/4W	
R562	1-216-677-11	METAL CHIP	12K	0.50% 1/10W	
R563	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R564	1-216-677-11	METAL CHIP	12K	0.50% 1/10W	
R565	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R566	1-216-687-11	METAL CHIP	33K	0.50% 1/10W	
R567	1-214-840-00	METAL	100	1% 1/2W	
R568	1-216-665-11	METAL CHIP	3.9K	0.50% 1/10W	
R569	1-216-691-11	METAL CHIP	47K	0.50% 1/10W	
R570	1-260-332-51	CARBON	2.2K	5% 1/2W	
R571	1-249-425-11	CARBON	4.7K	5% 1/4W	
R572	1-216-385-11	METAL OXIDE	0.47	5% 3W	F
R573	1-249-437-11	CARBON	47K	5% 1/4W	
R574	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R575	1-216-672-11	METAL CHIP	7.5K	0.50% 1/10W	
R576	1-215-869-11	METAL OXIDE	1K	5% 1W	F
R577	1-260-310-71	CARBON	33	5% 1/2W	
R578	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R579	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R580	1-214-840-00	METAL	100	1% 1/2W	
R581	1-260-316-51	CARBON	100	5% 1/2W	
R582	1-214-840-00	METAL	100	1% 1/2W	
R583	1-249-437-11	CARBON	47K	5% 1/4W	
R584	1-249-437-11	CARBON	47K	5% 1/4W	
R585	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R586	1-216-683-11	METAL CHIP	22K	0.50% 1/10W	
R587	1-215-886-11	METAL OXIDE	100	5% 2W	F
R588	1-260-085-11	CARBON	68	5% 1/2W	
R589	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R590	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R591	1-247-807-31	CARBON	100	5% 1/4W	
R593	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R594	1-216-683-11	METAL CHIP	22K	0.50% 1/10W	
R595	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W	
R597	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R598	1-216-675-91	METAL CHIP	10K	0.50% 1/10W	
R599	1-216-657-11	METAL CHIP	1.8K	0.50% 1/10W	
R701	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R702	1-249-393-11	CARBON	10	5% 1/4W	F
R703	1-215-459-00	METAL	39K	1% 1/4W	
R704	1-216-655-11	METAL CHIP	1.5K	0.50% 1/10W	
R705	1-249-413-11	CARBON	470	5% 1/4W	F
R706	1-249-389-11	CARBON	4.7	5% 1/4W	F
R707	1-249-389-11	CARBON	4.7	5% 1/4W	F

GDM-5411

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The components identified by ⋈ in this manual have been carefully factory-selected for eachset in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R708	1-215-881-11	METAL OXIDE	15	5%	2W	F
R709	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R710	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R711	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R713	1-216-059-00	RES,CHIP	2.7K	5%	1/10W	
R714	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R715	1-249-389-11	CARBON	4.7	5%	1/4W	F
R716	1-216-689-11	RES,CHIP	39K	5%	1/10W	
R717	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R718	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R719	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R720	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R721	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R722	1-260-292-11	CARBON	1	5%	1/2W	
R723	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R724	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R725	1-214-798-21	METAL	1.8	1%	1/2W	
R726	1-214-798-21	METAL	1.8	1%	1/2W	
R727	1-249-381-11	CARBON	1	5%	1/4W	F
R728	1-215-865-11	METAL OXIDE	220	5%	1W	F
R729	1-260-292-11	CARBON	1	5%	1/2W	
R730	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R731	1-216-059-00	RES,CHIP	2.7K	5%	1/10W	
R732	1-219-510-11	CARBON	470K	5%	1/2W	
R901	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R902	1-216-117-00	RES,CHIP	680K	5%	1/10W	
R903	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R904	1-216-033-00	RES,CHIP	220	5%	1/10W	
R906	1-216-033-00	RES,CHIP	220	5%	1/10W	
R907	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R908	1-216-399-00	METAL OXIDE	6.8	5%	3W	F
R911	1-216-041-00	RES,CHIP	470	5%	1/10W	
R912	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R914	1-247-791-91	CARBON	22	5%	1/4W	
R915	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R916	1-249-397-11	CARBON	22	5%	1/4W	F
R917	1-211-824-71	FUSIBLE	220	5%	1/2W	F
R918	1-219-727-11	METAL	68	5%	10W	
R919	1-219-748-11	CARBON	4.7K	5%	1/2W	
R920	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R921	1-249-429-11	CARBON	10K	5%	1/4W	
R922	1-249-389-11	CARBON	4.7	5%	1/4W	F
R923	1-218-762-11	METAL CHIP	270K	0.50%	1/10W	
R924	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R925	1-220-825-11	CARBON	330K	5%	1/2W	
R926	1-219-746-11	CARBON	1K	5%	1/2W	
R927	1-219-746-11	CARBON	1K	5%	1/2W	
R928	1-216-668-11	METAL CHIP	5.1K	0.50%	1/10W	
R929	1-216-675-91	METAL CHIP	10K	0.50%	1/10W	
R930	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	
R931	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	
R932	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R933	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R934	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R935	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R937	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R939	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R940	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R941	1-216-025-91	RES,CHIP	100	5%	1/10W	
R943	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R945	1-216-025-91	RES,CHIP	100	5%	1/10W	
R1501	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R1502	1-216-033-00	RES,CHIP	220	5%	1/10W	
R1503	1-216-682-11	METAL CHIP	20K	0.50%	1/10W	
R1504	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R1505	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R1506	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R1507	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R1510	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R1515	1-215-909-11	METAL OXIDE	47	5%	3W	F
R1517	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R1518	1-216-025-91	RES,CHIP	100	5%	1/10W	

<VARIABLE RESISTOR>

⋈ RV901 ⚠ 1-241-767-21 RES, ADJ, CERMET 100K (HVADJ)

<RELAY>

RY501 1-755-198-11 RELAY

<SPARK GAP>

SG901 1-517-499-21 GAP, SPARK
SG902 1-519-422-11 GAP, SPARK
SG903 1-519-422-11 GAP, SPARK

<TRANSFORMER>

T501 1-435-070-11 TRANSFORMER, HORIZONTAL DRIVE
T502 1-429-301-11 TRANSFORMER, FERRITE (HCT)
T503 1-431-413-21 TRANSFORMER, FERRITE (HST)
T505 1-419-127-11 COIL, HORIZONTAL LINEARITY
T701 1-431-414-11 TRANSFORMER, FERRITE (DFT)

T901 1-416-402-11 INDUCTOR 500µH
T902 ⚠ X-4560-175-1 TRANSFORMER ASSY, FLYBACK (NX-4502//J1D4)

<THERMISTOR>

TH501 1-807-796-11 THERMISTOR
TH502 1-807-796-11 THERMISTOR

****

* A-1372-632-A H BOARD, COMPLETE
****

<CAPACITOR>

C810 1-126-791-11 ELECT 10µF 20% 16V

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C814	1-126-786-11	ELECT	47µF	20% 16V	
		<CONNECTOR>			
CN801*	1-564-526-11	PLUG, CONNECTOR 11P			
		<DIODE>			
D801	8-719-064-11	DIODE SPR-325MVW			
		<TRANSISTOR>			
Q801	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q802	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q803	8-729-029-40	TRANSISTOR DTA124ESA			
Q804	8-729-029-40	TRANSISTOR DTA124ESA			
		<RESISTOR>			
R801	1-249-413-11	CARBON	470	5% 1/4W	
R802	1-247-807-31	CARBON	100	5% 1/4W	
R803	1-247-807-31	CARBON	100	5% 1/4W	
R804	1-247-815-91	CARBON	220	5% 1/4W	
R805	1-247-815-91	CARBON	220	5% 1/4W	
R806	1-249-413-11	CARBON	470	5% 1/4W	
R807	1-247-831-91	CARBON	1K	5% 1/4W	
R811	1-249-429-11	CARBON	10K	5% 1/4W	
R812	1-249-429-11	CARBON	10K	5% 1/4W	
R813	1-247-863-91	CARBON	22K	5% 1/4W	
R814	1-249-441-11	CARBON	100K	5% 1/4W	
R815	1-249-429-11	CARBON	10K	5% 1/4W	
R821	1-249-407-11	CARBON	150	5% 1/4W	
R822	1-249-413-11	CARBON	470	5% 1/4W	
R823	1-247-831-91	CARBON	1K	5% 1/4W	
R824	1-249-419-11	CARBON	1.5K	5% 1/4W	
		<SWITCH>			
S800	1-571-588-11	SWITCH, SLIDE (INPUT SELECT)			
S801	1-692-431-21	SWITCH, TACTILE (RESET)			
S802	1-692-431-21	SWITCH, TACTILE (ASC)			
S803	1-692-431-21	SWITCH, TACTILE (V-)			
S804	1-692-431-21	SWITCH, TACTILE (V+)			
S805	1-692-431-21	SWITCH, TACTILE (MENU)			
S806	1-692-431-21	SWITCH, TACTILE (H-)			
S807	1-692-431-21	SWITCH, TACTILE (H+)			
		<THERMISTOR>			
TH801	1-807-796-11	THERMISTOR			

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REF.NO.	PART NO.	DESCRIPTION			REMARK
*	A-1388-250-B	J BOARD, COMPLETE			
		**********			
		<CONNECTOR>			
CN891*	1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P			
		<SWITCH>			
S891 ⚠	1-571-433-31	SWITCH, PUSH (AC POWER)			

****

*	A-1394-980-A	N BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C001	1-163-009-11	CERAMIC CHIP	0.001µF	10% 50V	
C002	1-163-009-11	CERAMIC CHIP	0.001µF	10% 50V	
C003	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C005	1-163-255-91	CERAMIC CHIP	150pF	5% 50V	
C006	1-163-235-11	CERAMIC CHIP	22pF	5% 50V	
C007	1-163-235-11	CERAMIC CHIP	22pF	5% 50V	
C008	1-164-004-11	CERAMIC CHIP	0.1µF	10% 25V	
C009	1-115-339-11	CERAMIC CHIP	0.1µF	10% 50V	
C010	1-126-967-11	ELECT	47µF	20% 50V	
C011	1-115-339-11	CERAMIC CHIP	0.1µF	10% 50V	
C012	1-126-967-11	ELECT	47µF	20% 50V	
C013	1-126-965-11	ELECT	22µF	20% 50V	
C014	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C015	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C016	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C017	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C018	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C019	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C020	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C021	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C022	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C023	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C024	1-164-161-11	CERAMIC CHIP	0.0022µF	10% 50V	
C025	1-163-009-11	CERAMIC CHIP	0.001µF	10% 50V	
C026	1-104-665-11	ELECT	100µF	20% 25V	
C027	1-115-339-11	CERAMIC CHIP	0.1µF	10% 50V	
C028	1-163-220-11	CERAMIC CHIP	3pF	0.25pF 50V	
C029	1-163-241-11	CERAMIC CHIP	39pF	5% 50V	
C031	1-126-964-11	ELECT	10µF	20% 50V	
C033	1-163-021-91	CERAMIC CHIP	0.01µF	10% 50V	
C036	1-163-037-11	CERAMIC CHIP	0.022µF	10% 50V	
C037	1-126-964-11	ELECT	10µF	20% 50V	
C038	1-126-964-11	ELECT	10µF	20% 50V	
C039	1-126-964-11	ELECT	10µF	20% 50V	
C040	1-126-964-11	ELECT	10µF	20% 50V	
C041	1-126-964-11	ELECT	10µF	20% 50V	

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REF.NO.	PART NO.	DESCRIPTION			REMARK
C042	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C043	1-126-965-11	ELECT 22µF	20%	50V	
C044	1-163-037-11	CERAMIC CHIP 0.022µF	10%	50V	
C045	1-163-037-11	CERAMIC CHIP 0.022µF	10%	50V	
C046	1-163-037-11	CERAMIC CHIP 0.022µF	10%	50V	
C047	1-163-037-11	CERAMIC CHIP 0.022µF	10%	50V	
C048	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C049	1-126-964-11	ELECT 10µF	20%	50V	
C050	1-126-964-11	ELECT 10µF	20%	50V	
C051	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C052	1-126-933-11	ELECT 100µF	20%	16V	
C053	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C054	1-115-339-11	CERAMIC CHIP 0.1µF	10%	50V	
C055	1-104-664-11	ELECT 47µF	20%	25V	
C056	1-126-965-11	ELECT 22µF	20%	50V	
C057	1-126-964-11	ELECT 10µF	20%	50V	
C058	1-164-690-91	CERAMIC CHIP 0.0022µF	5%	50V	
C059	1-126-964-11	ELECT 10µF	20%	50V	
C061	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C062	1-126-925-11	ELECT 470µF	20%	10V	
C063	1-164-690-91	CERAMIC CHIP 0.0022µF	5%	50V	
C064	1-115-419-11	CERAMIC CHIP 3300pF	5%	25V	
C065	1-126-960-11	ELECT 1µF	20%	50V	
C066	1-164-690-91	CERAMIC CHIP 0.0022µF	5%	50V	
C067	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C068	1-136-169-00	FILM 0.22µF	5%	50V	
C069	1-115-339-11	CERAMIC CHIP 0.1µF	10%	50V	
C070	1-126-767-11	ELECT 1000µF	20%	16V	
C071	1-163-007-11	CERAMIC CHIP 680pF	10%	50V	
C072	1-126-942-61	ELECT 1000µF	20%	25V	
C073	1-115-339-11	CERAMIC CHIP 0.1µF	10%	50V	
C074	1-163-137-00	CERAMIC CHIP 680pF	5%	50V	
C075	1-163-251-11	CERAMIC CHIP 100pF	5%	50V	
C077	1-115-339-11	CERAMIC CHIP 0.1µF	10%	50V	
C078	1-136-169-00	FILM 0.22µF	5%	50V	
C079	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C080	1-126-967-11	ELECT 47µF	20%	50V	
C082	1-104-664-11	ELECT 47µF	20%	25V	
C083	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C084	1-126-964-11	ELECT 10µF	20%	50V	
C085	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C086	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C087	1-126-964-11	ELECT 10µF	20%	50V	
C089	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C090	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C091	1-126-933-11	ELECT 100µF	20%	16V	
C094	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C095	1-117-722-11	ELECT 2200µF	20%	10V	
C096	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C097	1-126-964-11	ELECT 10µF	20%	50V	
C098	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C099	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C1003	1-104-664-11	ELECT 47µF	20%	25V	
C1004	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C1005	1-163-005-11	CERAMIC CHIP 470pF	10%	50V	
C1006	1-164-161-11	CERAMIC CHIP 0.0022µF	10%	50V	
C1007	1-115-339-11	CERAMIC CHIP 0.1µF	10%	50V	
C5002	1-126-964-11	ELECT 10µF	20%	50V	
C5003	1-126-933-11	ELECT 100µF	20%	16V	
C5004	1-104-664-11	ELECT 47µF	20%	25V	
C5005	1-104-664-11	ELECT 47µF	20%	25V	
C5008	1-104-664-11	ELECT 47µF	20%	25V	
C5009	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5101	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5103	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5105	1-104-664-11	ELECT 47µF	20%	25V	
C5106	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5108	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5110	1-104-664-11	ELECT 47µF	20%	25V	
C5203	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5205	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5206	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C5301	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5303	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5304	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C5305	1-104-664-11	ELECT 47µF	20%	25V	
C5306	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5308	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5310	1-104-664-11	ELECT 47µF	20%	25V	
C5401	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5403	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C5404	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C5406	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5408	1-163-005-11	CERAMIC CHIP 470pF	10%	50V	
C5409	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C5413	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	
C5501	1-126-967-11	ELECT 47µF	20%	50V	
C5602	1-115-339-11	CERAMIC CHIP 0.1µF	10%	50V	
C5606	1-163-021-91	CERAMIC CHIP 0.01µF	10%	50V	
C5607	1-164-004-11	CERAMIC CHIP 0.1µF	10%	25V	

<CONNECTOR>

CN001	1-784-500-11	CONNECTOR, FFC/FPC 21P	
CN002*	1-564-511-11	PLUG, CONNECTOR 8P	
CN007*	1-564-512-11	PLUG, CONNECTOR 9P	
CN010	1-784-786-11	CONNECTOR, FFC 25P	
CN011	1-784-786-11	CONNECTOR, FFC 25P	
CN5001*	1-564-509-11	PLUG, CONNECTOR 6P	
CN5002*	1-564-511-11	PLUG, CONNECTOR 8P	
CN5003*	1-564-505-11	PLUG, CONNECTOR 2P	

<DIODE>

D001	8-719-062-51	DIODE 1PS226-115	
D002	8-719-062-51	DIODE 1PS226-115	
D003	8-719-062-51	DIODE 1PS226-115	
D004	8-719-062-51	DIODE 1PS226-115	
D005	8-719-109-89	ZENER DIODE RD5.6ESB2	
D006	8-719-109-89	ZENER DIODE RD5.6ESB2	

REF.NO.	PART NO.	DESCRIPTION	REMARK
D007	8-719-109-89	ZENER DIODE RD5.6ESB2	
D008	8-719-109-89	ZENER DIODE RD5.6ESB2	
D009	8-719-109-89	ZENER DIODE RD5.6ESB2	
D010	8-719-109-89	ZENER DIODE RD5.6ESB2	
D011	8-719-109-89	ZENER DIODE RD5.6ESB2	
D012	8-719-109-89	ZENER DIODE RD5.6ESB2	
D013	8-719-110-17	ZENER DIODE RD10ESB2	
D014	8-719-066-11	DIODE 1PS184-115	
D015	8-719-066-11	DIODE 1PS184-115	
D016	8-719-109-89	ZENER DIODE RD5.6ESB2	
D017	8-719-109-89	ZENER DIODE RD5.6ESB2	
D018	8-719-109-89	ZENER DIODE RD5.6ESB2	
D020	8-719-988-61	DIODE 1SS355TE-17	
D021	8-719-988-61	DIODE 1SS355TE-17	
D022	8-719-066-11	DIODE 1PS184-115	
D023	8-719-066-11	DIODE 1PS184-115	
D024	8-719-066-11	DIODE 1PS184-115	
D025	8-719-062-51	DIODE 1PS226-115	
D026	8-719-062-51	DIODE 1PS226-115	
D027	8-719-988-61	DIODE 1SS355TE-17	
D028	8-719-988-61	DIODE 1SS355TE-17	
D029	8-719-109-85	ZENER DIODE RD5.1ESB2	
D036	8-719-109-89	ZENER DIODE RD5.6ESB2	
D038	8-719-045-99	ZENER DIODE RD2.2M-T1B	
D040	8-719-109-89	ZENER DIODE RD5.6ESB2	
		<FERRITE BEAD>	
FB001	1-410-397-21	FERRITE 1.1µH	
FB002	1-410-397-21	FERRITE 1.1µH	
FB003	1-410-397-21	FERRITE 1.1µH	
FB5101	1-412-911-11	FERRITE 1.1µH	
FB5103	1-412-911-11	FERRITE 1.1µH	
FB5201	1-412-911-11	FERRITE 1.1µH	
FB5301	1-412-911-11	FERRITE 1.1µH	
FB5303	1-412-911-11	FERRITE 1.1µH	
FB5401	1-412-911-11	FERRITE 1.1µH	
FB5403	1-412-911-11	FERRITE 1.1µH	
FB5601	1-412-911-11	FERRITE 1.1µH	
		<SENSOR>	
GS5001	1-418-473-11	SENSOR UNIT, GEOMAGNETIC	
		<IC>	
IC001	8-759-658-88	IC CXD8744Q-0007	
IC002	8-759-162-80	IC MM1170BFB	
IC003	8-759-527-77	IC M24C16-MN6T	
IC004	8-759-639-81	IC SN74AHCT74PWR	
IC005	8-759-639-81	IC SN74AHCT74PWR	
IC006	8-759-700-78	IC NJM082M	
IC010	8-759-585-70	IC LA7865M-TLM	
IC011	8-759-442-20	IC 24LC21AT/SN	
IC012	8-759-442-20	IC 24LC21AT/SN	
IC5101	8-759-822-07	IC LA6515	
IC5201	8-759-822-07	IC LA6515	
IC5301	8-759-822-07	IC LA6515	
IC5401	8-759-822-07	IC LA6515	
		<COIL>	
L002	1-406-665-11	COIL, CHOKE 100µH	
L003	1-406-671-11	COIL, CHOKE 1mH	
		<TRANSISTOR>	
Q001	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q002	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q003	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q004	8-729-028-83	TRANSISTOR DTA124EUA-T106	
Q005	8-729-033-26	TRANSISTOR DTA114GKAT146	
Q006	8-729-027-49	TRANSISTOR DTC123EKA-T146	
Q007	8-729-901-00	TRANSISTOR DTC124EK	
Q008	8-729-033-25	TRANSISTOR DTC114GKA	
Q010	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q011	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q012	8-729-901-00	TRANSISTOR DTC124EK	
		<RESISTOR>	
R003	1-216-025-91	RES,CHIP 100 5% 1/10W	
R004	1-216-025-91	RES,CHIP 100 5% 1/10W	
R005	1-216-025-91	RES,CHIP 100 5% 1/10W	
R006	1-216-025-91	RES,CHIP 100 5% 1/10W	
R007	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R008	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R009	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R010	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R011	1-249-389-11	CARBON 4.7 5% 1/4W F	
R012	1-216-017-91	RES,CHIP 47 5% 1/10W	
R013	1-216-017-91	RES,CHIP 47 5% 1/10W	
R014	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R015	1-249-389-11	CARBON 4.7 5% 1/4W F	
R016	1-216-017-91	RES,CHIP 47 5% 1/10W	
R017	1-216-017-91	RES,CHIP 47 5% 1/10W	
R018	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R019	1-216-025-91	RES,CHIP 100 5% 1/10W	
R020	1-216-025-91	RES,CHIP 100 5% 1/10W	
R021	1-216-025-91	RES,CHIP 100 5% 1/10W	
R022	1-216-025-91	RES,CHIP 100 5% 1/10W	
R023	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R024	1-216-025-91	RES,CHIP 100 5% 1/10W	
R025	1-216-025-91	RES,CHIP 100 5% 1/10W	
R026	1-216-025-91	RES,CHIP 100 5% 1/10W	
R029	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R030	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R031	1-216-669-11	METAL CHIP 5.6K 0.50% 1/10W	
R032	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R034	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R035	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	

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REF.NO.	PART NO.	DESCRIPTION		REMARK
R036	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R037	1-216-073-00	RES,CHIP	10K	5% 1/10W
R039	1-216-025-91	RES,CHIP	100	5% 1/10W
R040	1-216-025-91	RES,CHIP	100	5% 1/10W
R042	1-216-073-00	RES,CHIP	10K	5% 1/10W
R043	1-216-049-91	RES,CHIP	1K	5% 1/10W
R044	1-216-657-11	METAL CHIP	1.8K	0.50% 1/10W
R045	1-216-049-91	RES,CHIP	1K	5% 1/10W
R047	1-216-049-91	RES,CHIP	1K	5% 1/10W
R048	1-216-049-91	RES,CHIP	1K	5% 1/10W
R049	1-216-073-00	RES,CHIP	10K	5% 1/10W
R050	1-216-089-91	RES,CHIP	47K	5% 1/10W
R051	1-216-077-91	RES,CHIP	15K	5% 1/10W
R052	1-216-077-91	RES,CHIP	15K	5% 1/10W
R053	1-216-065-91	RES,CHIP	4.7K	5% 1/10W
R054	1-216-077-91	RES,CHIP	15K	5% 1/10W
R055	1-216-077-91	RES,CHIP	15K	5% 1/10W
R056	1-216-073-00	RES,CHIP	10K	5% 1/10W
R057	1-216-073-00	RES,CHIP	10K	5% 1/10W
R058	1-216-067-00	RES,CHIP	5.6K	5% 1/10W
R059	1-216-057-00	RES,CHIP	2.2K	5% 1/10W
R060	1-216-057-00	RES,CHIP	2.2K	5% 1/10W
R061	1-216-049-91	RES,CHIP	1K	5% 1/10W
R062	1-216-613-11	METAL CHIP	27	0.50% 1/10W
R063	1-216-613-11	METAL CHIP	27	0.50% 1/10W
R064	1-216-613-11	METAL CHIP	27	0.50% 1/10W
R066	1-216-049-91	RES,CHIP	1K	5% 1/10W
R067	1-216-073-00	RES,CHIP	10K	5% 1/10W
R075	1-215-407-00	METAL	270	1% 1/4W
R076	1-215-407-00	METAL	270	1% 1/4W
R077	1-216-073-00	RES,CHIP	10K	5% 1/10W
R078	1-216-121-91	RES,CHIP	1M	5% 1/10W
R079	1-216-295-91	SHORT	0	
R080	1-216-295-91	SHORT	0	
R081	1-216-049-91	RES,CHIP	1K	5% 1/10W
R082	1-216-049-91	RES,CHIP	1K	5% 1/10W
R084	1-216-073-00	RES,CHIP	10K	5% 1/10W
R085	1-216-049-91	RES,CHIP	1K	5% 1/10W
R086	1-216-049-91	RES,CHIP	1K	5% 1/10W
R090	1-216-073-00	RES,CHIP	10K	5% 1/10W
R091	1-216-049-91	RES,CHIP	1K	5% 1/10W
R092	1-216-049-91	RES,CHIP	1K	5% 1/10W
R093	1-216-049-91	RES,CHIP	1K	5% 1/10W
R094	1-216-049-91	RES,CHIP	1K	5% 1/10W
R095	1-216-049-91	RES,CHIP	1K	5% 1/10W
R096	1-216-065-91	RES,CHIP	4.7K	5% 1/10W
R097	1-216-073-00	RES,CHIP	10K	5% 1/10W
R098	1-216-073-00	RES,CHIP	10K	5% 1/10W
R099	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1001	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1002	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1003	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1004	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1005	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1006	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1007	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1008	1-216-667-11	METAL CHIP	4.7K	0.50% 1/10W
R1009	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1010	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1011	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1012	1-216-057-00	RES,CHIP	2.2K	5% 1/10W
R1013	1-216-057-00	RES,CHIP	2.2K	5% 1/10W
R1014	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1015	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1016	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1017	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1018	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1019	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1020	1-216-065-91	RES,CHIP	4.7K	5% 1/10W
R1021	1-216-065-91	RES,CHIP	4.7K	5% 1/10W
R1022	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R1023	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R1024	1-216-681-11	METAL CHIP	18K	0.50% 1/10W
R1025	1-216-025-91	RES,CHIP	100	5% 1/10W
R1026	1-216-109-00	RES,CHIP	330K	5% 1/10W
R1027	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R1028	1-216-647-11	METAL CHIP	680	0.50% 1/10W
R1029	1-216-025-91	RES,CHIP	100	5% 1/10W
R1030	1-216-025-91	RES,CHIP	100	5% 1/10W
R1031	1-216-025-91	RES,CHIP	100	5% 1/10W
R1032	1-216-025-91	RES,CHIP	100	5% 1/10W
R1033	1-216-025-91	RES,CHIP	100	5% 1/10W
R1034	1-216-025-91	RES,CHIP	100	5% 1/10W
R1035	1-216-025-91	RES,CHIP	100	5% 1/10W
R1036	1-216-025-91	RES,CHIP	100	5% 1/10W
R1037	1-216-025-91	RES,CHIP	100	5% 1/10W
R1038	1-216-025-91	RES,CHIP	100	5% 1/10W
R1039	1-216-025-91	RES,CHIP	100	5% 1/10W
R1040	1-216-025-91	RES,CHIP	100	5% 1/10W
R1041	1-216-025-91	RES,CHIP	100	5% 1/10W
R1042	1-216-025-91	RES,CHIP	100	5% 1/10W
R1043	1-216-025-91	RES,CHIP	100	5% 1/10W
R1044	1-216-667-11	METAL CHIP	4.7K	0.50% 1/10W
R1045	1-216-065-91	RES,CHIP	4.7K	5% 1/10W
R1047	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1049	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1050	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1051	1-216-097-91	RES,CHIP	100K	5% 1/10W
R1052	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1053	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1054	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1055	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1056	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1057	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1058	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1059	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1061	1-216-073-00	RES,CHIP	10K	5% 1/10W
R1062	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1063	1-216-065-91	RES,CHIP	4.7K	5% 1/10W
R1064	1-216-049-91	RES,CHIP	1K	5% 1/10W
R1065	1-216-125-00	RES,CHIP	1.5M	5% 1/10W
R1066	1-216-073-00	RES,CHIP	10K	5% 1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1067	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1068	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1069	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1070	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1071	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5003	1-216-295-91	SHORT	0		
R5005	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5006	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5007	1-216-049-91	RES,CHIP	1K	5%	1/10W
R5010	1-216-295-91	SHORT	0		
R5011	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5015	1-216-049-91	RES,CHIP	1K	5%	1/10W
R5108	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R5109	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R5110	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5113	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5115	1-215-859-00	METAL OXIDE	22	5%	1W F
R5116	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5119	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5122	1-215-859-00	METAL OXIDE	22	5%	1W F
R5205	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5206	1-215-859-00	METAL OXIDE	22	5%	1W F
R5207	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5208	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R5209	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R5308	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R5309	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R5310	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5313	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5315	1-215-859-00	METAL OXIDE	22	5%	1W F
R5316	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5319	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5322	1-215-859-00	METAL OXIDE	22	5%	1W F
R5406	1-216-083-00	RES,CHIP	27K	5%	1/10W
R5407	1-216-085-00	RES,CHIP	33K	5%	1/10W
R5408	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R5409	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R5410	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5413	1-216-097-91	RES,CHIP	100K	5%	1/10W
R5415	1-215-887-00	METAL OXIDE	150	5%	2W F
R5416	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5419	1-216-097-91	RES,CHIP	100K	5%	1/10W
R5422	1-216-451-11	METAL OXIDE	120	5%	2W F
R5502	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5503	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5504	1-216-089-91	RES,CHIP	47K	5%	1/10W
R5505	1-216-089-91	RES,CHIP	47K	5%	1/10W
R5506	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R5507	1-249-382-11	CARBON	1.2	5%	1/4W F
R5508	1-249-382-11	CARBON	1.2	5%	1/4W F
R5509	1-249-382-11	CARBON	1.2	5%	1/4W F
R5510	1-249-382-11	CARBON	1.2	5%	1/4W F
R5602	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5603	1-216-077-91	RES,CHIP	15K	5%	1/10W
R5604	1-216-081-00	RES,CHIP	22K	5%	1/10W
R5605	1-216-097-91	RES,CHIP	100K	5%	1/10W
R5607	1-215-862-11	METAL OXIDE	68	5%	1W F
R5610	1-216-308-00	RES,CHIP	4.7	5%	1/10W

<CRYSTAL>

X001	1-760-682-21	VIBRATOR, CRYSTAL (24.756MHz)

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